A Naval Safety Center Publication

approach

SEPTEMBER 1973 THE NAVAL AVIATION SAFETY REVIEW

Nosedown Off the Cat

THE PILOT and RIO of an F-4J completed their first arrested landing aboard a CVA and taxied forward to the No. 1 catapult. The hookup was completed, and the cat officer signalled for engine turnup.

The pilot advanced throttles to MRT and saluted. The launch signal was given, and the *Phantom* aircraft accelerated throughout the stroke.

As the nosewheel cleared the bow, an abrupt nosedown pitch was observed, followed immediately by a dual ejection. The aircraft continued down and struck the water approximately 100 yards ahead of the ship. Both crewmembers landed safely in the water. As the ship maneuvered to pass clear, the plane guard helicopter picked them up.

Based on interviews with individuals concerned, investigators determined that:

Pilot:

- Did not notice any unusual control pressures or trim requirements during the flight to the ship.
- Completed prelaunch and panel checklist during taxi to catapult, felt rushed, and skipped a few items including control checks. UHF interruptions precluded use of challenge and reply method.
- Advanced engines to MRT, checked gages, saluted, pulled stick aft, felt normal acceleration followed by nosedown pitch, felt rush of air, tumbling sensation, and water entry.

RIO:

- Felt that pilot was somewhat tense – attempted to calm him down.
- Did not request complete checklist readoff from pilot.
- Did not check stabilator tips in combat mirrors to ensure stabilator leading edge down.
- Called "nose-up" twice over UHF prior to initiating command ejection.

Catapult Officer:

- Could not recall stabilator position prior to launch.
- Stated that his written instructions are vague regarding stabilator position.

Catapult Hookup Checker:

- Noticed stabilator in full leading-edge-up (nose down) position following engine turnup.

Catapult Safety Checker:

- Refused to give "thumbs up" signal because of stabilator position.
- Catapult officer became impatient and demanded signal "Aircraft up or down?"
- Checker gave "up" signal for fear of being chewed out.

Squadron Pri-Fly Observer:

- Was watching aircraft on approach instead of catapult launch.

A review of the PLAT film showed that:

- Stabilator appeared to function normally during approach, arrestment, and rollout.
- Stabilator remained full leading edge up throughout catapult hookup, engine runup, and stroke.
- Aircraft disappeared off the bow with stabilator full leading edge up. No movement was detected throughout launch sequence.

Investigators utilized a maintenance training aircraft to explore the possibility of an aircraft malfunction which could have caused the stabilator to fail full leading edge up, regardless of stick position.

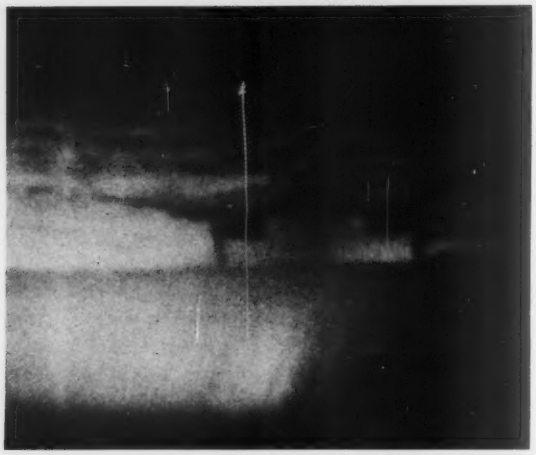
Seven, nonredundant, connecting links between the stick grip and stabilator hinge points were disconnected, each in turn. In five instances, the stabilator traveled by its own accord to a position at or near full leading edge down. In two instances, it did travel to full leading edge up, however, the stick forces normally felt by the pilot were completely absent, allowing the stick to flop freely fore and aft.

The possibility of a dual simultaneous failure of the 34 redundant connecting links was considered highly remote.

A review of Safety UR and Incident Reports concerning previous F-4 flight control linkage failures revealed no significant problems.

NAVSAFECEN records reveal that this is the sixth loss of an F-4 resulting from a stabilator position full leading edge up during a catapult launch. In all but one

Stabilator leading edge up.



No change as aircraft launches.

Landing gear shows nose down attitude as aircraft leaves deck.

of the mishaps, the following data apply:

Reason for launch – initial CQ.

Aircraft gross weight – ranged from 32,800 to 38,000 lbs.

Total pilot time – ranged from 397 to 864 hours.

Total F-4 time – ranged from 67 hours to 193 hours.

First cat shot for 3 pilots.

Fifth cat shot for 1 pilot.

Tenth cat shot for 1 pilot.

Injuries – five fatal; five minor.

Extensive testing by the Flight Test Division, Naval Air Test Center, Patuxent River, Md., concerning various stabilator positions during catapult launches revealed the following;

- Given an initial nosedown pitch rate, arresting that pitch rate – even with the application of full aft stick – is extremely critical.
- Following a catapult shot with full stabilator leading edge up, altitude loss off the bow will exceed 50 feet regardless of pilot action.

Although the possibility exists that a flight control malfunction occurred, the probability is slight when past documentation and flight control design features are considered.

Investigators concluded that the most probable cause of this mishap was pilot factor in that the pilot failed to position the stick full aft prior to launch. Although the pilot stated that the stick was full aft, his statement loses credibility because of an incident that occurred on his first flight following the accident.

In this incident he had completed the engine turnup on the catapult, saluted the catapult officer, and positioned his head against the headrest. The catapult officer observed the stabilator full leading edge up and suspended the launch. The pilot stated that he intended to position the stick aft but was suspended before he had the chance.

The catapult officer's failure to ensure proper stabilator position is considered a fundamental contributing factor to the accident. Although others in the launch sequence chain of responsibility could have taken action to suspend the launch, the catapult officer is the final link in that chain.

An urgent change to the catapult officers instructions has been recommended to type commanders by the Naval Safety Center. In addition, a recommended change to the F-4 NATOPS Manual has been submitted for the purpose of amplifying flight crew responsibilities and inserting a warning concerning stabilator position. ◄

Firefighter's Protective Clothing

MISGUIDED ECONOMY

THE NAVAL Supply Systems Command has reported that during a visit to a naval air station representatives of the Navy Clothing and Textile Research Unit observed that aircraft firefighters were wearing a commercial firecoat purchased on the open market. The coat in question was an "Aluminized Firecoat" consisting of:

- Aluminum-pigmented, coated outershell – 16 oz/sq yd aluminum-pigmented, flame-resistant fabric (base cloth – cotton duck).
- Vapor barrier – 6.8 oz/sq yd neoprene-coated, open, cotton fabric.
- Inner insulative liner – 14.5 oz/sq yd wool melton.

Inquiries as to the preference of this commercial coat over the standard Navy firefighter's proximity coat, which is available as a stock item, disclosed that the subject coat was preferred by reasons of greater durability and lower replacement costs. It turns out that this is misguided economy.

Flame resistance tests on the aluminum-pigmented, coated outershell fabric of the commercial coat showed *flaming with sustained burning of the sample*. On the other hand, the vacuum-deposited, aluminized (metallized) outershell (asbestos/cotton) fabric of the standard Navy firefighter's proximity suit shows less than 1 second afterflame with a charred or burned area less than 0.5 inches in length. This protection is required by a firefighter who might accidentally be caught in a fire area.

Additional tests performed on the radiant heat reflectivity test apparatus of the aluminum-pigmented, outershell fabric of the commercial coat showed the material to have very low heat reflectivity. It will withstand an irradiance of 2.5 cals/sq cm/sec for only 15 to 20 seconds before heavy blistering, charring, and burning occurs, accompanied by voluminous smoke formation. The standard Navy aluminized asbestos outershell fabric will withstand the same irradiance for 60 seconds plus without any appreciable effect on the material. (This is one of the standard acceptance tests which the material must pass to be considered satisfactory for use in this type of protective clothing.) It is known that the standard aluminized fabric is susceptible to abrasion, and after relatively short periods of wear, its reflectance properties are compromised. Even when this happens, however, the outer fabric will not burn, and the coat with its insulation will still provide some protection.

It is difficult for the user to properly evaluate the relative protective merits of the commercial material against the standard Navy material because of cost and wear factors. The commercial coat will be more durable than the standard in terms of wear, but the heat protective properties are much lower than the Navy standard. This difference is minimized after wear, but the commercial coat still does not provide the reflective protection required.

Outlook

The Navy Clothing and Textile Research Unit is actively engaged in the tri-service endeavor of the Aircraft Ground Fire Suppression and Rescue Systems in the development of improved reflective firefighter's clothing having increased durability and wearer acceptance over the present standard firefighter's clothing. In the meantime, all naval air stations and other users should be aware of the potential hazards and misguided economy in using non-standard aluminized firefighter's suits. ◄

I've Grown Accustomed to. . . .

GROWING accustomed to doing things in a regular, unvarying, or mechanical manner has its place in practically everything from canning sardines to stringing beads. In such professional endeavors as piloting aircraft, however, doing things routinely can be downright dangerous.

In the flying game, *routinism* is a contributing cause of many mishaps and near-misses every year. Most pilot causal factor accidents result from poor planning and mechanical actions. There is a definite lack of headwork associated with undershoots, overshoots, stall/spins, groundloops, wheels-up landings, and taxi accidents. The ultimate in poor planning, however, is the mishap involving fuel starvation.

Routinism: a product of laziness leading to a reluctance on the part of an individual to exert the necessary effort to prepare himself for the unusual. He may be well-acquainted with the contents of his particular NATOPS manual. But, like every other technical manual, NATOPS can't possibly cover every contingency. Thus, when something non-routine occurs, the pilot who doesn't stay one good jump ahead of his bird is in for trouble.

As an example, take the pilot who tries to salvage a bad approach. For months, he had been routinely making good landings. Suddenly, he finds himself in a dangerous situation – an overshoot and low at the "forty-five." How he got there is vague at the moment and the least of his worries, but instead of taking a waveoff, he continues and fights the aircraft to the deck. Luck is with him, and he makes it without mishap.

Unlike most naval aviators who have probably had the same experience, and learned a lesson, this guy can't see how lucky he was. Instead, a feeling of confidence in his ability to recover from a dangerous situation overtakes him. He now accepts unnecessary risks *routinely*. Why not – hasn't he proved himself capable of hacking any problem that may arise? To him, preparing for the unusual – the emergency – is for other naval aviators with far less talent.

If he lives long enough, he becomes a leader and sets the pattern for junior pilots who try to emulate his every

move. Unfortunately, some of them are not so lucky and buy the farm at an early age.

A sense of responsibility is the mark of a mature aviator. He knows that certain routines are necessary such as preflight inspection, using the checklists, planning the flight, briefing and debriefing, and keeping in good mental and physical condition. He knows, however, that none of these things are directly associated with the actual control of the aircraft. *And a responsible aviator will never allow his flying to become routine.* He is thinking all the time and anticipating his every move. He knows that conditions change and is prepared to deal with them.

Here are some of the pitfalls of routinism:

- Land on a wet or icy runway the same as on a dry one and attempt to turn off at the nearest intersection.
- Land into a crosswind using "into the wind" procedures.
- Reach for the landing gear handle as the wheels leave the runway.
- Taxi fast regardless of conditions.
- Make a bombing or rocket run over water in haze the same as in clear weather.
- Fly a local flight in marginal VFR weather with the same fuel reserve as when it's CAVU.
- Fly a regular mission after a lengthy layoff without a fam hop.
- Make a letdown through broken clouds the same as in clear weather.

There are many more pitfalls associated with routinism, but these are some of the more common. Regular, unvarying, or mechanical procedures create bad habits. Thinking and planning will prevent just about any pilot factor accident you can name. Thinking and planning are continuing processes, and the minute they falter, actions become routine. ◄

One of the pitfalls of routinism is landing on a wet or icy runway in the same manner as on a dry one.

Things that go Bump in the Night

By CAPT A. M. Lloyd, USMC,
ASO, VMA(AW)-332

HERE'S the situation: You are on a local training flight, cruising at 10,000 feet MSL, 250 KIAS. It has been a good hop, the kind you like to get when you can – takeoff at sunset for a little "pinkie" time, followed by some night proficiency hours.

As the sky darkens, your dark visor becomes more hindrance than help, so up it goes. You wonder whether to put the clear visor down. Now and then it causes a little reflection. Besides, who ever heard of birds flying at 10,000 feet, especially in a pitch black sky? Yeah, and what about those readyroom rumors concerning the return of the single visor? Someone up the chain must think changing visors in flight isn't too important. And even if there is one bird dumb enough to fly this high at night, what are the odds of my being able to find him in all this sky?

Well, all you aviation types who value good vision take a look at the accompanying pictures. *This aircraft was cruising at 10,000 feet MSL at 250 KIAS on a pitch black night and found that one dumb bird.* When a portion of the bird entered the cockpit, it brought a little glass along with it and also caused a flashlight and a NATOPS Pocket Checklist to fly around for awhile. The pilot and BN? After a quick shower, they were good as new. They both had their clear visors down. **Would you have?** ◄

Two views show extent of cockpit damage caused by high flying night bird.

The culprit's final resting place after a most unusual night flight.

The following letter, because of its length, is presented as an article.

Flight Guard:
Who's Got the Ball?

NAS Atlanta – Paragraph 302a.(8) of OPNAVINST 3721.1F states that flight guard for inbound VFR flights and other flights not in the FAA ATC system is a base operations responsibility. Paragraph 2c of OPNAVINST 3722.8H states that FAA is responsible for initiating overdue action on all flights for which flight plans are entered into the FAA system. The note under paragraph 340b of OPNAVINST 3710.7F warns pilots that cancellation of an instrument flight plan in no way relieves the pilot of the requirement for "closing out" his flight plan. Now, what all this means to personnel concerned is that: (1) FAA initiates SAR action on overdue IFR aircraft, (2) NAS Ops initiates SAR for inbound VFR overdue aircraft and (3) a pilot who requests "Cancel my IFR" has not "closed out/cancelled" his flight plan.

Problem: When Navy Ops receives an IFR inbound, they assume, and rightly so, that FAA has the flight guard responsibility. FAA assumes the flight guard responsibility until the pilot says "Cancel my IFR," at which time FAA removes his flight proposal strip from their board and deposits it in the "circular file." At this point, the flight plan is no longer in the FAA system. No one has notified Navy Ops of the change from IFR to VFR, so duty personnel think FAA still has the flight guard responsibility. The pilot thinks he's on a VFR flight plan when in reality, FAA has closed him out. In this situation, the pilot is flying around with no flight plan, and no one has the flight guard responsibility for the aircraft.

Possible solutions:

1. Make pilots aware of the necessity of refiling a VFR flight plan with an FSS whenever an instrument flight clearance/plan is cancelled.

2. Require FAA to relay changes from IFR to VFR to the destination airport.

3. Require military base ops to guard all inbound flights regardless of whether on VFR or IFR flight plans.

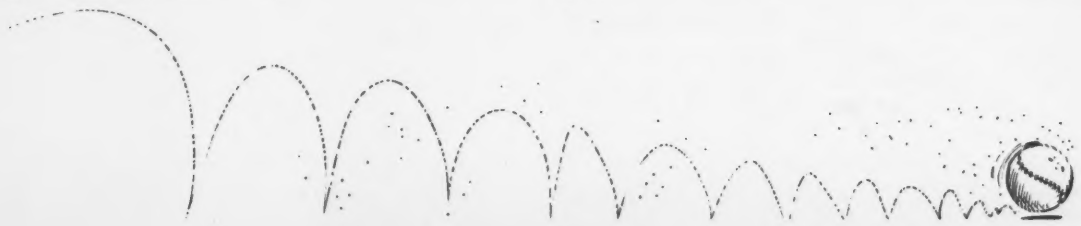
In view of the problems that have occurred recently in trying to get pilots to use the new flight purpose codes on their yellow sheets, it is recommended that solution (1) be pursued only as a last resort.

CDR M. E. Feltham
Operations Officer

• Assuming that there is a valid requirement to cancel IFR and proceed VFR, the best solution *is* No. (1). ATC procedures are in effect which require controllers, when advised by the pilot that he desires to change from IFR to VFR, to advise the pilot to contact the appropriate FSS. Solution No. (2) was the procedure used about 5 years ago. This was not satisfactory to either the Navy or the Air Force, and as a result, solution No. (1) came about.

Another point in favor of solution No. (1) is that all users of the ATC system, whether military or civil, are afforded the same service. The flight guard responsibility lies with the FAA as long as a flight plan is filed.

The Chief of Naval Operations recently concurred in a proposed change to OPNAVINST 3722.8H (Joint) that will make military base operations and the FAA equally responsible for flight guard for those aircraft entered into the FAA system. The effect will be to increase the responsibility of base operations for all inbound military flights. However, this does *not* modify the requirement to refile a VFR flight plan with a FSS to ensure flight guard. ◄



Me Quit? HOW?

"CIGARETTE SMOKING IS DANGEROUS TO YOUR HEALTH."

By this time, we are all aware that smoking is linked to cancer, emphysema, chronic bronchitis, and circulatory diseases. Some medics say that the smoker's smoke is a health hazard to non-smokers in the vicinity. New research shows that non-smokers are harmed by breathing others' smoke in smoke-saturated rooms. The heart beats faster. Blood pressure goes up, and so does the level of carbon monoxide in the blood.

As pilots and aircrewmen, you should know that smoking reduces your blood's ability to transport oxygen. This cuts down your night vision because your eyes are big oxygen consumers, and it limits your tolerance to hypoxia. (An aviator who is a heavy smoker can get as high as 10 percent carbon monoxide hemoglobin saturation. Only 3 percent is enough to cause measurable impairment of vision and altitude tolerance.)

And smoking while oxygen equipment is in use, although strictly forbidden by NATOPS, has been suspected in several oxygen mask fires and resulting fatalities.

We'll assume you are aware also that smoking costs money and that, far from being a super-sex-symbol when you take a deep drag on your weed, to a non-smoking female type you probably don't smell so good.

If you've read this far, you're probably one who has considered quitting smoking.

How do you go about it?

Recently, the American Heart Association sent us a pamphlet outlining a specific program devised by a Dr. Donald T. Fredrickson, former director of the Smoking Control Program and Smoking Withdrawal Clinics in the New York City Department of Health. His ideas sound good to us.

"I am convinced beyond any shadow of a doubt that every cigarette smoker can stop smoking, and I mean *every* smoker," Dr. Frederickson says. "This is true no matter how long or how much you have smoked, or how addicted you may think you are, how many times you have fallen off the wagon and tried to crawl back on, or how chained you may believe you are to your cigarettes. *Every single cigarette smoker has the ability to stop smoking.*"

Dr. Fredrickson almost guarantees that if you follow his program, let yourself go and hold nothing back, you can become a *permanent non-smoker* during the next couple of weeks. It works this way:

STEP 1: FIRST WEEK

Before you begin a smoking withdrawal program, you should do some serious thinking about your sincerity of purpose and readiness to follow through. Here are some ground rules:

1. *List several reasons for giving up smoking that are intensely personal, that have meaning for you.*

2. Find someone who is interested in following a smoking withdrawal program with you and who is willing to compare notes with you as you follow the program.

3. Agree that you will follow all instructions in your program to the letter.

4. Determine that you will approach your smoking withdrawal in a positive way and not with grim determination.

If you are ready to work on this, continue with Step 1.

Instructions

1. Your first job is to build motivation. From your list of reasons for giving up smoking, select the most important one – that is, the one that will turn you on and keep you moving. *Write it down.*

2. Begin to think about how you should change your behavior if you wish to succeed. *Write these ideas down.*

3. Adopt a positive attitude. What has been your

attitude before? *Describe. Indicate what attitude you are going to have now.*

4. Develop a *cigarette tally* of your smoking behavior. Using the model shown (Fig. 1), draw up a chart on an 8½ x 11-inch sheet of paper. This paper will be used for recording information about each cigarette you smoke during the day, including *Time, Occasion, Feeling,* and *Value* on a scale of 1 (most important) to 5 (least important).

- Fold the cigarette tally sheet lengthwise, wrap it around your cigarette pack, and secure the package with two rubber bands.
- Carry your pack where you normally do and continue smoking as you have done before.
- Every time you take a cigarette, unwrap the tally sheet and fill in the appropriate information.

STEP 2: SECOND WEEK

Have you cut down on your smoking as a result of the wrapping and recording procedure? Which cigarettes were most important to you?

Most people find that the wrapping technique makes it impossible for them to smoke automatically. In addition, tallying related activities helps people to see the powerful associations that they have linked with the smoking act. They then realize that smoking is not an addiction but a habit they have taught themselves by constantly associating actions with feelings and activities. Once they realize this, they can see their way clear to the conclusion that they can reverse the process they, themselves, began – they can retrain themselves.

Instructions:

1. Continue with your smoking record.
2. *Write down the important reasons why you want to stop smoking.*
3. Carry your cigarettes in a different place. If you normally carry them in one pocket, switch to another. But, whatever you do, make it a little more difficult to reach for your pack.
4. Never buy a carton of cigarettes from here on. Instead, buy one pack at a time.
5. Switch your brand at least twice during the week.
6. Do not carry matches or a lighter from now on.
7. Begin a gradual program of reduction.

- Each morning, *jot down the number of cigarettes you think you can manage on for the day. At* night, *write down how many cigarettes you actually smoked.*
- Reduce the number of cigarettes you smoke each day in any way you wish. Aim for eliminating the most important cigarettes or the least important. It is up to you to decide what plan will work for you.

STEP 3: THIRD WEEK

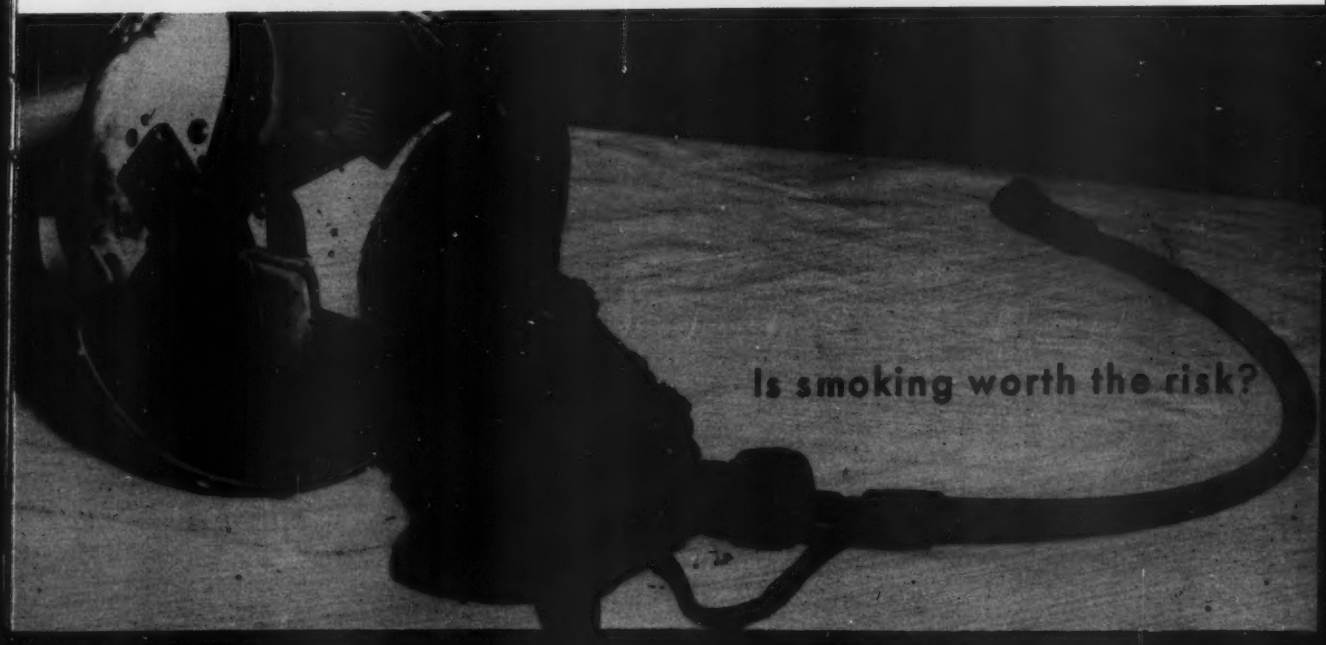
Now you're going to take a smoker's test, but first

CIGARETTE TALLY

Date July 1

Time	Occasion	Feeling	Value
1. 0800	rising	depressed	1
2.			
3.			

Fig. 1



look over the smoking record that you've been keeping for the past 2 weeks. Can you identify those circumstances under which you smoked heavily? Which were the most important cigarettes in your daily routine?

Some people find that if they go after the toughest cigarettes first, the others take care of themselves.

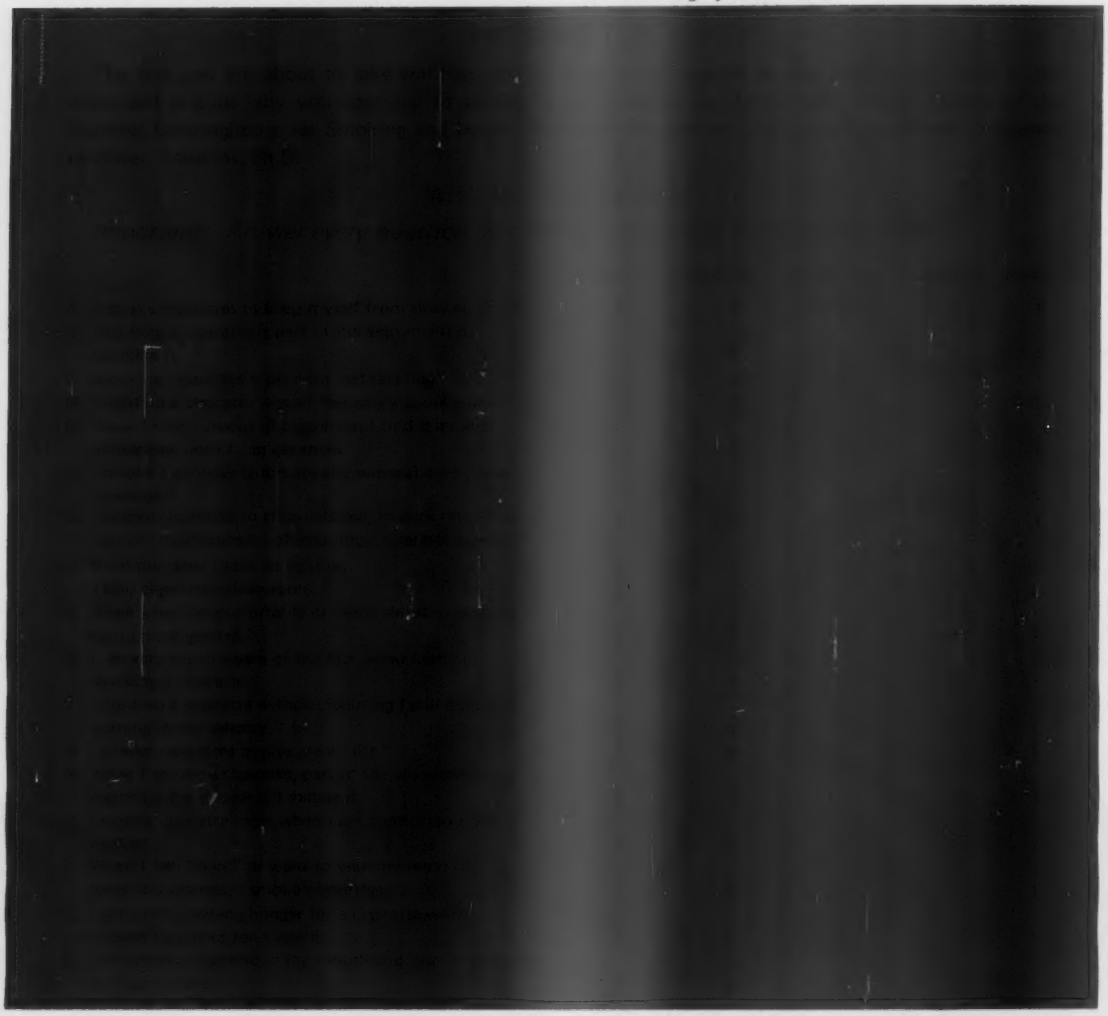


Fig. 2

Others prefer to go after the 3's, 4's, and 5's – those that aren't quite that important. Once they've eliminated those, they're ready to tackle the tough ones. No two smokers smoke for the same reasons. This is simply a reflection of the fact that no two people are quite alike. So, now let's find out some of the reasons why you smoke! (See Figs. 2 and 3.)

Instructions:

- Continue all earlier instructions.
- But now plan a 24-hour period when you will try to go without smoking entirely.
- Put your resolution into practice.
- *Write a description of what happened during your "no smoking" period.*

STEP 4: FOURTH WEEK

What has been most helpful to you when the urge to smoke came upon you? As you continue your withdrawal program this week, here are some suggestions given by former smokers:

1. Walking or exercise helps. A change in activity patterns and an increase in physical exercise relieve you

of excess nervousness.

2. Avoid some of the closer associations developed in smoking. Substitute other activities for ones you associate with smoking such as TV or coffee. These need not be permanent substitutions.

3. Decide that you are not going to let the "tail wag the dog." Each time you reach for a cigarette, think, "I am not going to allow myself to be a Pavlovian creature with a conditioned response."

4. Substitute opposite gestures. For example, instead of reaching for a cigarette, move something away from you.

STEP 5: FIFTH WEEK

Craving

Some people find that during withdrawal they gain weight. If this is your problem, here are two things you can do:

1. Get a bit of extra exercise to burn up those extra calories.

2. Reach for low calorie snack foods.

During withdrawal, smokers complain of a variety of symptoms including tightness in the chest, being out of breath, dizziness, or perspiring. There is no real physical basis for these symptoms, and most of them subside within a few weeks. Usually, the symptoms reflect anxiety. The body is learning a new way to deal with fear and tension and expresses itself in these ways. Of course, if serious symptoms persist, you should see your doctor.

Addiction vs. Habit

The reason that you have been able to work on your own smoking cure is related to the fact that smoking is a habit, not an addiction.

"Addiction" refers to a physical or chemical change within the body that cues you to do something. Although smoking may have brought damage to your physical health and well-being and the continued process can trigger chain effects of disease, it is not a chemical addiction. It is a habit – a form of learned behavior you have trained yourself in. That is the reason you can learn to be a non-smoker. And this is why thousands of smokers each year train themselves to be nonsmokers.

Have you found yourself thinking about yourself as a nonsmoker at this point? A famous chemist named Emile Coue once said, "When your imagination is working in one direction and your willpower in another, your imagination always wins the day."

Once you begin to change your true feelings about cigarettes and what they mean in your life so that your ideas are clear and match your will to stop, your chances of success increase. With this idea in mind, you cannot be discouraged. Even if you didn't make it this time, just crawl right back on the wagon.

Remember the ingredients of success:

- Find a motive or reason for stopping.
- Change your attitude.
- Change your behavior.

A positive attitude – a feeling that you are giving yourself a gift – will be most helpful. Consider the benefits of withdrawal: you get a habit under control, you acquire a renewed feeling of self-confidence, and you reduce the risk of being stricken and crippled at midlife by one of the chronic diseases associated with smoking. You also protect the health of others.

You have nothing to lose by trying to stop smoking. You have the world to gain.

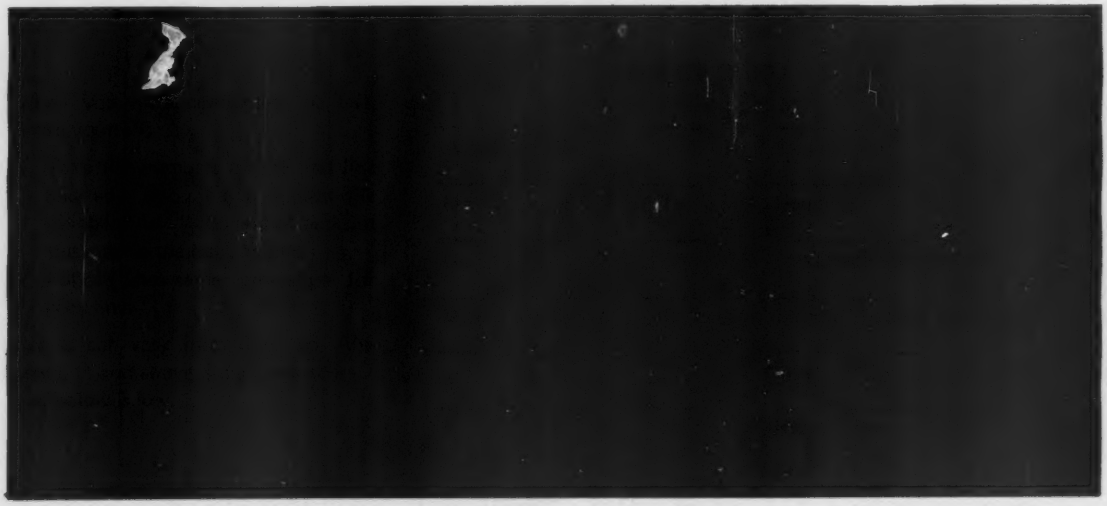


Fig. 3

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SMOKER'S TEST

The test you are about to take will help you to identify the type of smoker you are and some of the important reasons why you continue to smoke. It was designed by Daniel Horn, Ph.D., Director of the National Clearinghouse for Smoking and Health, Public Health Service, and is based on a model developed by Silvan Tomkins, Ph.D.

WHY DO YOU SMOKE?

Important: Answer every question by circling one number for each statement.

	always	frequently	occasionally	seldom	never
A. I smoke cigarettes to keep myself from slowing down.	5	4	3	2	1
B. Handling a cigarette is part of the enjoyment of smoking it.	5	4	3	2	1
C. Smoking cigarettes is pleasant and relaxing.	5	4	3	2	1
D. I light up a cigarette when I feel angry about something.	5	4	3	2	1
E. When I have run out of cigarettes, I find it almost unbearable until I can get them.	5	4	3	2	1
F. I smoke cigarettes automatically without even being aware of it.	5	4	3	2	1
G. I smoke cigarettes to stimulate me, to perk myself up.	5	4	3	2	1
H. Part of the enjoyment of smoking a cigarette comes from the steps I take to light up.	5	4	3	2	1
I. I find cigarettes pleasurable.	5	4	3	2	1
J. When I feel uncomfortable or upset about something, I light up a cigarette.	5	4	3	2	1
K. I am very much aware of the fact when I am not smoking a cigarette.	5	4	3	2	1
L. I light up a cigarette without realizing I still have one burning in the ashtray.	5	4	3	2	1
M. I smoke cigarettes to give me a "lift."	5	4	3	2	1
N. When I smoke a cigarette, part of the enjoyment is watching the smoke as I exhale it.	5	4	3	2	1
O. I want a cigarette most when I am comfortable and relaxed.	5	4	3	2	1
P. When I feel "blue" or want to take my mind off cares and worries, I smoke cigarettes.	5	4	3	2	1
Q. I get a real gnawing hunger for a cigarette when I haven't smoked for a while.	5	4	3	2	1
R. I've found a cigarette in my mouth and didn't remember putting it there.	5	4	3	2	1

Fig. 2

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1. Walking or exercise helps. A change in activity patterns and an increase in physical exercise relieve you

of excess nervousness.

2. Avoid some of the closer associations developed in smoking. Substitute other activities for ones you associate with smoking such as TV or coffee. These need not be permanent substitutions.

3. Decide that you are not going to let the "tail wag the dog." Each time you reach for a cigarette, think, "I am not going to allow myself to be a Pavlovian creature with a conditioned response."

4. Substitute opposite gestures. For example, instead of reaching for a cigarette, move something away from you.

STEP 5: FIFTH WEEK

Craving

Some people find that during withdrawal they gain weight. If this is your problem, here are two things you can do:

1. Get a bit of extra exercise to burn up those extra calories.

2. Reach for low calorie snack foods.

During withdrawal, smokers complain of a variety of symptoms including tightness in the chest, being out of breath, dizziness, or perspiring. There is no real physical basis for these symptoms, and most of them subside within a few weeks. Usually, the symptoms reflect anxiety. The body is learning a new way to deal with fear and tension and expresses itself in these ways. Of course, if serious symptoms persist, you should see your doctor.

Addiction vs. Habit

The reason that you have been able to work on your own smoking cure is related to the fact that smoking is a habit, not an addiction.

"Addiction" refers to a physical or chemical change within the body that cues you to do something. Although smoking may have brought damage to your physical health and well-being and the continued process can trigger chain effects of disease, it is not a chemical addiction. It is a habit – a form of learned behavior you have trained yourself in. That is the reason you can learn to be a non-smoker. And this is why thousands of smokers each year train themselves to be nonsmokers.

Have you found yourself thinking about yourself as a nonsmoker at this point? A famous chemist named Emile Coue once said, "When your imagination is working in one direction and your willpower in another, your imagination always wins the day."

Once you begin to change your true feelings about cigarettes and what they mean in your life so that your ideas are clear and match your will to stop, your chances of success increase. With this idea in mind, you cannot be discouraged. Even if you didn't make it this time, just crawl right back on the wagon.

Remember the ingredients of success:

- Find a motive or reason for stopping.
- Change your attitude.
- Change your behavior.

A positive attitude – a feeling that you are giving yourself a gift – will be most helpful. Consider the benefits of withdrawal: you get a habit under control, you acquire a renewed feeling of self-confidence, and you reduce the risk of being stricken and crippled at midlife by one of the chronic diseases associated with smoking. You also protect the health of others.

You have nothing to lose by trying to stop smoking. You have the world to gain.

SCORE CARD

When you have completed the test, score yourself:

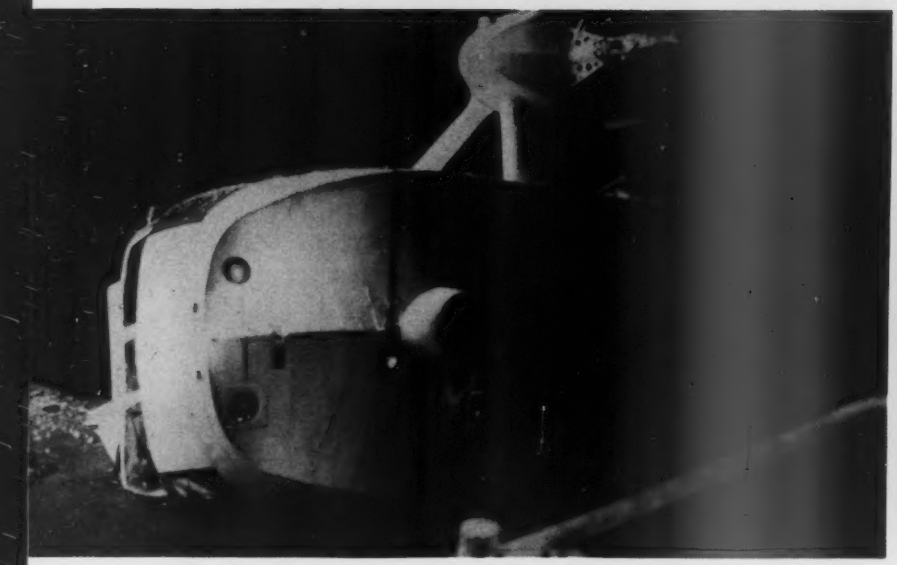
1. Take the numbers on the first line and add across; that is, add the numbers for A, G, and M and put the total in the last column.
2. Follow the same procedure for each line.

Scores can vary from 3 to 15. Any score 11 and above is high; any score 7 and below is low.

A	G	M	=	Stimulation
B	H	N	=	Handling
C	I	O	=	Pleasurable Relaxation
D	J	P	=	Crutch: Tension Reduction
E	K	Q	=	Craving: Psychological Addiction
F	L	R	=	Habit – Reflex

Fig. 3

A SAD BIRD



- Two main rotor blades broken
- Tail cone and tail pylon severed from fuselage
- Tail rotor blades bent and scraped
- Tail rotor drive shaft bent
- Stringers and skin torn from keel to overhead
- Starboard sponson crushed and flotation bag ripped
- Rescue hoist lost overboard
- Unknown damage to engines and rotor head

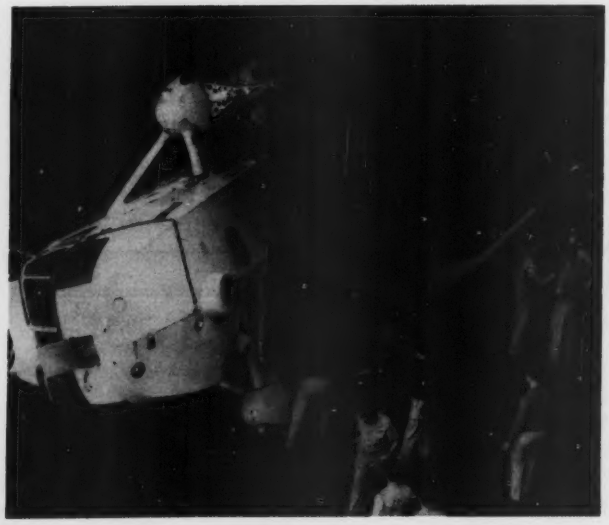
REALLY, it was a simple operation initially. The aircraft handling officer told the director to tow the helicopter onto No. 4 elevator and take it below – into hangar bay two.

The flight deck elevator operator, an airman apprentice, was assigned to the elevator crew 4 days before the accident. He admitted he had received 30 minutes operating instructions on No. 1 elevator, but on this day, he was operating No. 4 elevator for the first time without a checkout or instructions. He *assumed* No. 4 operated just like No. 1, and no one had told him otherwise.

When he climbed into the elevator platform, he noticed on the selector switch an additional position, 02 LEVEL, which he hadn't seen before. That afternoon, after operating all morning without a hitch, he became involved in shifting some aircraft from the hangar deck to the flight deck.

Just prior to the accident, the operator had lowered the helicopter to the hangar deck level. He saw the hangar deck crew hook the tow bar to the tractor and begin pulling the helicopter into the bay. A CPO appeared and said, "That elevator has to make a stop at the 02 level to get a camera for an RA-5C." The

The edge of the elevator pinned the nose of the helicopter against the hangar overhead. The crushed area, just behind the cockpit, looks as if a huge knife had started to cut through but hadn't quite finished the job.



operator turned the selector to the 02 level, and as he looked below to see if the helicopter was clear, his hand hit the "UP" button. The elevator caught the nose of the helicopter and flipped it on its side. The elevator was stopped – below the 02 level – and when the brake rider and others on the elevator were safe, it was returned to the hangar deck. There was no fire and no one was injured.

Normally, any elevator operation requires activation of both upper and lower station controls before it can be moved thus providing a safeguard against inadvertent operation. This particular elevator, however, was modified to provide for intermediate stops at the 02 level by the upper operator alone. Interviews with operators and supervisors showed that the unique circuitry of the "A3J" project to No. 4 elevator (bypassing the two-man rule) is not generally known. *Elevator operators must be specifically briefed on the peculiarities of this change.* ◄

Mishap Prevention Tool

Trend Analysis Worksheet

Submitted by VT-28

AIRCRAFT MISHAP SUMMARY AND TREND ANALYSIS

UNIT VT-28 | A/C TS-2A | FY 73 | PAGE 4

DATE	A/C	MISHAP					CAUSE															PILOT	REMARKS
							PILOT			NATOPS	SUPV			NAMP	MATERIAL				FAC.		OTHER	UND	
		B	GA	I	MIN	MAJ	IP	SP	OP		T	M	O		E	A	L	O	SH	CV			
1 DEC	09			92												✓							ROCHE	HYD LEAK WINGFOLD – LOOSE NUT
1 DEC	37			93											✓								ROCHE	#1 CHIP DECK – SLIVER
1 DEC	37			94														✓					FISHER	FUEL FUMES – DRAIN VALVE LEAK
5 DEC	26			95													✓						SEARS	STBD MM UNSAFE – BROKEN WIRE
7 DEC	30			96											✓						ENG. CHG.		FRALEY	#1 CHIP – GEARTOOTH
12 DEC	17			97											✓								WOLYNIES	#2 CHIP – SLIVER
13 DEC	26			98														✓					FRALEY	FUEL FUMES – CRACKED B-NUT
13 DEC	02			99														✓					WAINWRIGHT	FUEL FUMES – FILLER CAP GASKET
14 DEC	08			100											✓								OWENS	#1 FIRE – AMP
15 DEC	22			101											✓								SPEYRER	#2 FIRE – 1, 8, 9 STACKS BROKEN
16 DEC	22			102											✓								RHODES	ENGINE QUIT ON DECK – MAG
16 DEC	17			103														✓					PETERS	FUEL FUMES – DRAIN VALVE LEAK
18 DEC	81			104											✓								FRALEY	BAD MAG X –
18 DEC	08			105											✓								BOUCHARD	#2 FIRE – 4 & 5 STACKS BROKEN
21 DEC	29		3											✓										A/C TOWED INTO HANGAR DOOR
																								THIS PERIOD TOT PILOT AUG
																								FLT HRS 829 22
																								FLTS 302
																								FY 73 TOT PILOT AUG
																								FLT HRS 8531 35
																								FLTS 3126
TOTAL			1	14										1	8	1	1	4						
BROUGHT FORWARD		5	2	91			2							2	43	11	11	22	2		1	2		
CUMULATIVE TOTAL		5	3	105			2							3	51	12	12	26	2		1	2		

Chart 1.

THE AVIATION Safety Course at Monterey stresses the value and importance of determining developing trends in an effective safety program. The NAVSAFECEN Safety Review Checklist requires incorporation of a complete file of aircraft accidents, incidents, and ground accidents in each unit's safety program. Combining these two areas can provide an effective safety tool with many uses.

Training Squadron TWENTY-EIGHT's answer is the

AIRCRAFT MISHAP SUMMARY AND TREND ANALYSIS

UNIT	A/C	FY	PAGE

DATE	A/C	MISHAP					CAUSE																		REMARKS
							PILOT			NATOPS	SUPV			NAMP	MATERIAL				FAC-		OTHER	UND	PILOT	
		B	GA	I	MIN	MAJ	IP	SP	OP		T	M	O		E	A	L	O	SH	CV				
		B	B	I	M	M	I	S	O	N	T	M	O	M	E	A	L	O	F	F	O	U	P	
		I	R	N	I	A	N	T	T	A	R	A	T	A	N	I	A	T	A	A	T	N	I	
		R	O	C	N	J	S	U	H	T	A	I	H	I	G	R	N	H	C	C	H	D	L	
		D	U	I	O	O	T	D	E	O	I	N	E	N	I	F	D	E	I	I	E	E	O	
			N	D	R	R	R	E	R	P	N	T	R	T	N	O	I	R	L	L	R	T	T	
		S	D	E			U	N		S	I	E		E	E	A	N		I	I		E		
		E		N	S	S	C	T	P		N	N		N		M	O		T	T	C	R	I	
		R	A	T	E	E	T		I		O	A		A		E			Y	Y	A	M	N	
		I	C		R	R	O	P	L			N		N			O				U	I		
		A	C	S	I	I	R	I	O			C		C			E		S	C	S	N	C	
		L	I	E	A	A		L	T			E		E			A		H	A	E	E	O	
			D	R	L	L	P	O									R		O	R		D	M	
			E	I			I	T						P					R	R			M	
			N	A			L							E					E	I			A	
			T	L			O							R						E			N	
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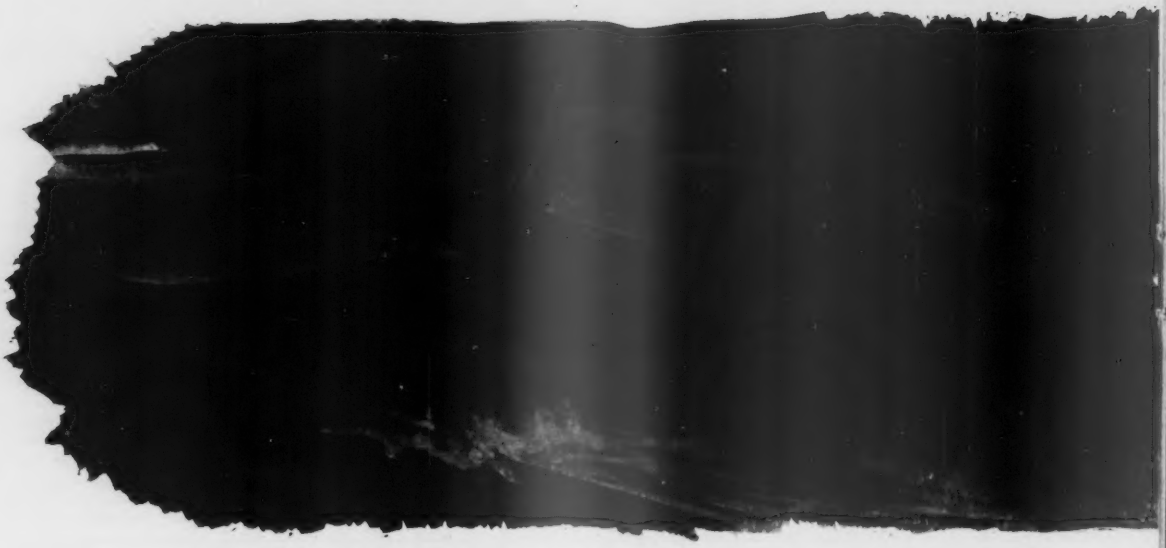
			S											O										
			E											N										
			R											N										
			I											E										
			A											L										
			L																					
TOTAL																								
BROUGHT FORWARD																								
CUMULATIVE TOTAL																								

Chart 2.

"Aircraft Mishap Summary and Trend Analysis Worksheet" (Chart 1), a workable and effective mishap log utilizing cause factors as established in Appendix H of OPNAVINST 3750.6H. Although appearing complicated at first glance, a closer look reveals six categories: date of occurrence, aircraft side number, type of mishap, cause factors, pilot in command, and remarks. Chart 2 provides an explanation of each column of the worksheet. The remarks section is utilized for a brief mishap and cause factor description. The mishap file and worksheet are maintained daily by the safety yeoman.

Valuable data are contributed to the safety officer's prevention program through use of the completed worksheet. Developing trends such as aircraft repeat discrepancies and pilot tendencies are readily apparent so that areas upon which to focus the safety effort can be pinpointed. The historical aspects of the worksheet lead to monthly safety topics for AOMs. Statistics can be easily compiled so that data of current and prior periods may be compared to provide material for safety standdown presentations. Without a tool such as the "Aircraft Mishap Summary and Trend Analysis Worksheet," it would prove extremely time-consuming to accumulate the above information.

The mishap summary should provide, to those who are constantly on the lookout for new and improved methods, a welcome addition to any safety program while providing automatic cues from collected data to find new safety prevention measures. Although the mishap log provides valuable statistics including developing trends, aircraft repeat discrepancies, monthly safety themes, safety standdown presentations, the completion of followup action, etc., it does not appreciably increase the safety officer's workload. ◄



The LUCKY, Old, Bold Pilot

There are old pilots,
And there are bold pilots
But, there are no old, bold pilots.

DON'T believe it. Eighteen years and 5000 hours make me old in this business, and I've found it still takes a bold pilot to do his thing in the light attack tailhook specialty. So, I conclude that I'm both old *and* bold . . . but when I reflect on the close calls, the lapses in self-discipline, and moments of poor airmanship, I must admit to being a LUCKY old, bold pilot.

There was that A-4 I flew into the water at 500 knots and another one that was on fire and airborne just long enough to fly 270 degrees of turn to a quick landing and a runway bonfire. And those three T-28s that waited until they were close to runways before they quit. Then, there was that F-4 that flew between me and my wingman, and that dark night down at 100 feet with the LSO (old Black Mac) screaming for me, No. 2 in the groove, to get some power on and climb. There was also a low state A-4 landing at Leeward one night when the deck got fouled and the bingo distance was scrambled. Fuel at touchdown – 200 lbs.

There were half a dozen taxi-one wires and a bad bolter down a wallowing deck with the centerline sliding left as I went hurtling down a dark line of *Phantom* noses nuzzled up to the foul line.

I can remember a night of clouds and ice with no radio when suddenly, everything cleared and the field was in sight. Another night at the end of a 28 flight-hour, cross-country weekend saw two pilots fall asleep for a few minutes while their T-28 wandered a few miles off track.

I can picture those dark nights in the North Atlantic on old Shang – me, God, the meatball, and good old Paddles. And a 600-lb night bolter in a rainshower off France. And those thousands of dive runs where I hung in there for just a tad more tracking time to sweeten it up. And the minimum altitude runs where you got as low as you could, and just as the pipper got to the target, you zapped the stick forward, pickled, and pulled.

There were those hops where I felt really invincible and did the standoff trick with the flak and SAM sites. Plus those night road recces between the ridge lines of the Sierras, and scores of night dive bombing hops on marine smoke lites in the black Med.

In all, there were countless heart-pounding moments in

those thousands of airborne hours.

Yes, I'm old and bold, but LUCKY, too. There's no accounting for much of my good luck, but the older I get, the more I realize it is up to each of us to make our own luck. I believe the way to do this is by getting more than my share of OFTs and NCLT periods . . . by not challenging the odds or the rules . . . by substituting the savvy of experience for slower reflexes. I worry about details and put a lot of time into planning my precious hours in the air. I abide by the rules in the execution of missions and keep a close watch on my wingies. I plan for the unexpected and try to hold an alternative plan in reserve. I fly the ball. There are enough exciting moments in this incomparable profession without hanging it out further than the law allows. I have learned that if you push the rules, you are going to need *more than your share* of luck – and this is something no one can rely on.

As an old, bold pilot, I have an advantage on the young tailhooker in that I have years of experience to rely on (I still get a kick out of outflying the young studs in the basics like CEPs, EATs, and OK3s). But, given his quick reflexes, the smart young aviator can even the score – and then some. If he accepts the limits, lives by the rules, and applies himself professionally, he can make his own luck. He may miss out on a few hairy experiences, but there's an excellent chance that he, too, will become an old, bold pilot. ◄

CAT TIPS

By LCDR R. N. Whalen
Naval Safety Center

Suddenly you're a forecaster. Want a good reason why you should be more thoroughly knowledgeable not only about CAT, but aviation weather in general? Some day you may have to fill out your own DD 175-1 using a wall full of charts and a few written instructions.

The Air Weather Service (USAF counterpart to the Naval Weather Service) has been directed to cut people and services. Therefore, many Air Force weather detachments will no longer operate full time. Observers will most probably be on duty around the clock, but forecasters will only be on duty from 16 to 18 hours.

At such a nonforecaster-equipped weather det, you'll still be able to get a flight weather briefing, but from a regional briefing station over the telephone with expected delays of 10 to 30 minutes. Eventually you'll get all the information for your DD 175-1, but you'll have to fill in the blanks. For the whole story, see "RBS – Regional Briefing-Station" in the June 1973 APPROACH.

Clear air turbulence – What's it? . . . Where's it? . . . How's it avoided? . . . Why's it I should know about it?

EACH year, inflight mishaps attributed to CAT damage many aircraft and cause numerous injuries to passengers and crewmembers. Some of these CAT-caused mishaps are unavoidable. Others, however, could have been avoided if the pilots had known more about CAT, i.e., what it is, where it's found, and how to avoid it.

In aviation terminology, CAT is turbulence encountered in clear air, but not associated with thunderstorms, towering cumulus, etc. Thermals and wind shears are the main causes, and studies have shown a correlation between the position of the jet stream and reported occurrences of high-altitude turbulence. CAT usually occurs with definite and well-known features of flow such as unstable air masses, inversion layers, and air in motion above mountainous terrain.

Turbulence prevails frequently in shallow layers less than 500 feet thick. But turbulent layers several thousand feet in thickness are also encountered.

Canada's Ministry of Transport has developed the following rules of thumb (applicable to westerly jet streams) to assist pilots in avoiding or minimizing CAT encounters.

Turbulence should be anticipated:

1. When jet streams exist with velocities stronger than 110 knots at the core: near the jet stream above the core, in the jet stream front below the core, and on the low pressure side (normally, poleward). These areas frequently have strong wind shears.

2. Whenever the flightpath traverses a strong jet stream near mountainous terrain.

3. Where 20-knot isotachs (lines of equal windspeed) are less than 60 nautical miles apart.

4. When vertical shear exists greater than 5 knots per thousand feet.

5. Near curving jet streams, especially those that curve around deep pressure troughs.

6. Near sharp wind-shift areas associated with pressure troughs. Pressure *ridges* can also have rough air associated with them.

7. Where CAT has been previously reported. (Adjust airspeed prior to turbulence encounter.)

When CAT is encountered:

1. In direct headwind or tailwind conditions, change flight level or course. A turn to the right in the Northern Hemisphere (to the left in the Southern Hemisphere) will place the aircraft in more favorable winds. If a turn is not feasible, a climb or descent to the next flight level will usually find smoother air.

2. In a crosswind, changing course isn't too

Lenticular (lens or almond-shaped) clouds caused by orography can be good indicators of clear air turbulence.

important because the rough areas are narrow.

3. In an abrupt wind shift associated with a sharp pressure trough, establish a course across the trough rather than parallel to it.

4. When penetrating a sloping tropopause, watch the temperature gage. The coldest point along the flightpath will mark tropopause penetration. Turbulence will be more pronounced in the temperature change zone of the stratosphere (above the tropopause).

Both vertical and horizontal shear are greatly intensified in mountain wave conditions. When the flightpath traverses mountain wave flow, therefore, fly at turbulence penetration speed. Whenever possible, also avoid flight over areas where the terrain drops abruptly, even though there may be no lenticular clouds to identify the condition.

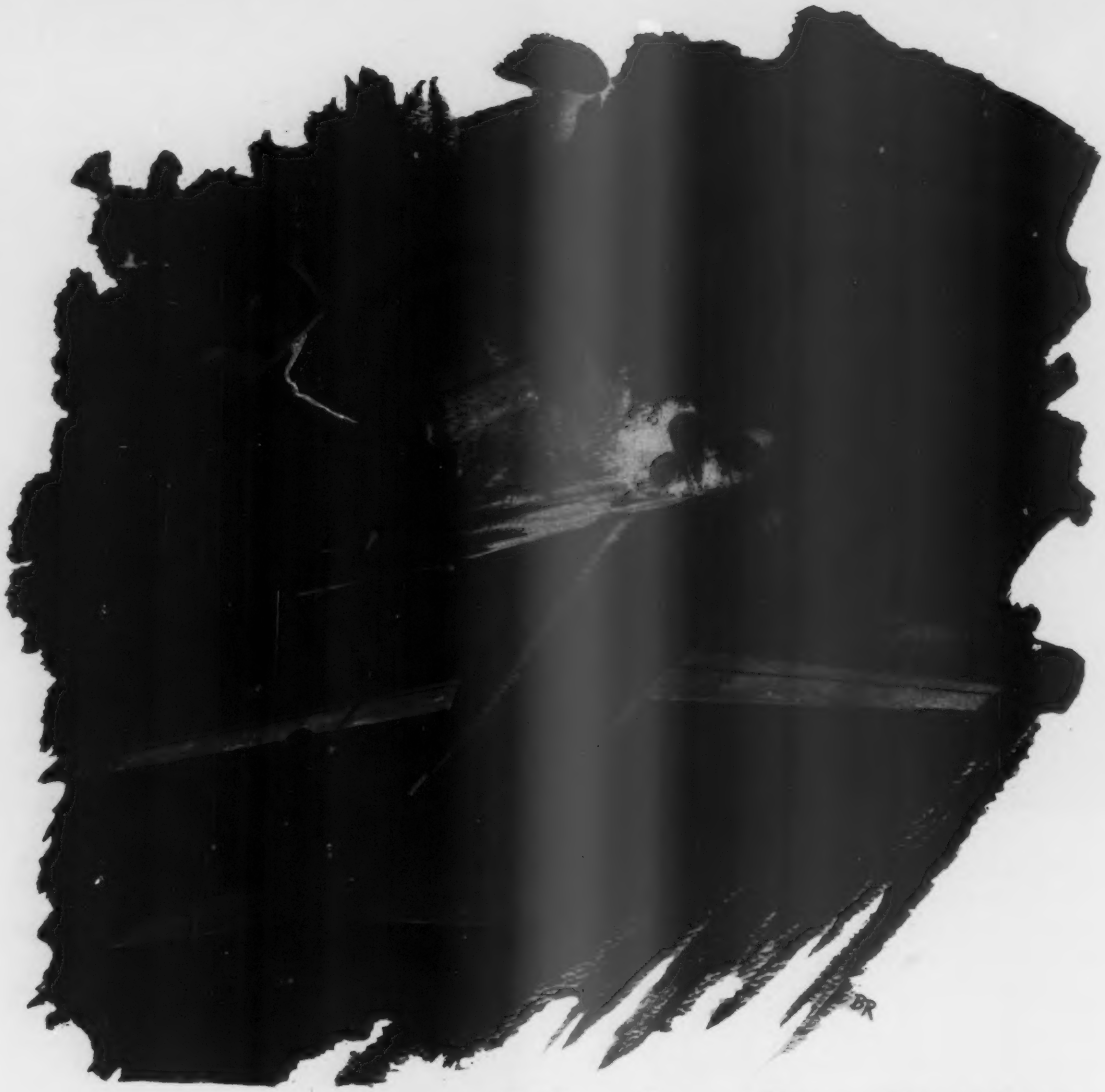
A lot is being done to perfect a remote CAT sensing device. But presently, there is no such operational device.

Several methods have been studied. These include: active use of radar, microwaves, infrared, and visible portions of the electromagnetic spectrum; passive use of infrared, millimeter waves, and visible light; air temperature probes; electric field measurements; electric charging of aircraft; ozone detection; and microbarometric measurements.

Techniques which have good potential for future applications are the laser doppler radar for air and ground use and ground-based ultrasensitive microwave doppler radars. Acoustic radars and laser doppler radars are potentially useful for terminal area turbulence sensing.

CAT appears to be associated with abrupt changes in air temperature on the order of 2° -5°C. Based on this, the Barnes IRCAT (infrared clear air turbulence) detector, under certain conditions, can detect horizontal atmospheric temperature variations of 5° -6°C up to 8.5 nautical miles. Accurate sensing will not be realized, however, when the sensor's line of sight is not horizontal. Therefore, the sensor must be pitch stabilized.

Although there is presently no operational remote CAT sensing device, it's just a matter of time. But until then, realize that . . . CAT can be dangerous, and often disastrous. Respect it, and if you know what's it . . . where's it . . . how's it avoided . . . why's it you should know about it, then you've taken a giant step in properly planning a safe, CAT-free flight. ◄



Trouble in the Water

AN INTERNAL explosion in the starboard engine of an A-6 showered sparks onto the flight deck as the aircraft accelerated down the catapult track. The *Intruder* climbed into the pitch black, horizonless night, leveled off, then began to settle. At 500 feet, the pilot jettisoned external stores. The aircraft began to climb again, peaking out at 600 to 700 feet, then began a shallow descent.

At 250 feet, the bombardier/navigator ejected, followed immediately by the pilot. The aircraft crashed into the sea a mile and a half ahead of the ship.

. . . Less than a minute had elapsed since launch.

Although the ejections were "normal in all respects," both the pilot and B/N had troubles after water entry.

The helicopter pickups went smoothly. Success in this phase of the SAR evolution can be attributed to the efficient helo crew and the survivors' knowledge of procedures, due in part to the helo detachment's rescue briefings of the squadrons aboard ship.

The B/N ejected first. At the pilot's command, he pulled the seatpan firing handle and was on his way.

"I felt the seat fire and heard a 'pop' which I presume was the firing cartridge," he recalls. "There was a mild rush of air. I tumbled forward for one revolution, and

then there was a very moderate but solid parachute opening shock." (This was by no means the B/N's first parachute descent. As a sports parachutist, he had made 50 jumps.)

"In front of me, I saw the wing lights of the aircraft. I watched it fall and hit the water.

"My first reaction during descent was to check my parachute canopy, but the risers were crossed and held my head down. I was not concerned because this had happened to me before on several of my sport jumps.

"I started to untwist the risers, but saw that I was about to hit the water. I positioned myself for water entry. Rather gently, I impacted the water on my right side, submerged, and came to the surface right away. Shroudlines were already around my legs and shoulders. When I tried to back away from the parachute, the swells pushed me into it.

"I inflated my LPA-1 by pulling the right toggle and then the left. For some reason, I momentarily forgot about my Koch fittings and cut away one or two handfuls of shroudlines before I remembered them.

"With no difficulty I found and released the Kochs. I decided not to cut any more shroudlines because I felt that by doing so I would just create more lines. I never have really believed that a tangled parachute would drown a fully conscious man in a calm sea anyway. (*Believe it – Ed.*)

"The parachute was not dragging me down, so I left it alone and tried to get my strobe light out. I carry it in a pocket attached to the right side of my torso harness just below the helicopter lift ring. *(Not good – should be carried in the survival vest. – Ed.)* I was having trouble getting the light out when I saw the helicopter headed in my direction. I left the light and ignited the night end of an easy-to-reach Mk-13 flare.

"The helicopter crew did not seem to see my flare. After the flare burned out, I got my strobe light out and turned it on. It worked fine, but I could not get it to stick to the velcro tape on my helmet. I held it with my left hand.

"My parachute was still not giving me any trouble, so I deployed my raft. This was surprisingly easy to do with one hand while holding the strobe light in the air with the other. Then I released my lap belt and, dragging shroudlines behind me, crawled into the raft from the small end.

"By the time the helo arrived, I was rid of most of the shroudlines around my legs, arms, and shoulders, but it still took the swimmer some time to get the rest of them clear of my torso."

Let's switch a minute to the helo swimmer's account of events at this point.

"The survivor was pretty well wrapped up in the lines," the swimmer begins, "so I started to tow him

away from his chute and untangle the lines at the same time. Quite a few of the lines fell away, so I towed him a little further."

The swimmer stopped and dove again to see how badly the B/N was still tangled. Ten or 12 lines were wrapped around his legs, and one heavy piece of webbing – possibly part of his chute harness – was wrapped around him.

The helo came overhead again at this time. Pickup was still not possible, so the helo pilot backed off and put a spotlight on the men in the water.

"I asked the survivor if he had released his Koch

fittings and he said he had," the swimmer continues.

"I tried to untangle the remaining lines – maybe six – but to no avail. I dove under once again. This time, I saw his shroudcutter hanging down in the water. His chute had started to sink and was completely beneath and in front of him now. I cut his knife loose and also cut the remaining shroudlines free. I towed him farther away to prevent him from becoming entangled again."

He towed the B/N 10 yards, then signalled the helo for pickup. He hooked the survivor to the hoist and himself to his swimmer's sling, turned out the light on his harness, and gave the helo a thumbs-up signal. They were hoisted aboard.

The B/N had high praise for the helo swimmer.

"The swimmer took complete control of the situation when he arrived," the B/N reports. "His directions were simple, explicit, and easy to follow. He was extremely courteous, which surprised me, the circumstances being what they were. I was very impressed with his professionalism and felt completely at ease with him there, even though my teeth had started to chatter, and I was shaking some. I felt very cold, but I think it was due more to shock than exposure."

The pilot also had trouble with parachute shroudlines.

Ejecting at 250 feet, he impacted the water without inflating his LPA-1 or taking any other action relative to his survival equipment. He surfaced facing the parachute. A gentle wind was billowing the chute in front of him to a height of 3 feet.

"I reached for the Koch fittings to release the chute and lifted both release guards. When I pulled downward, only the left released. This was not a malfunction – I simply missed the right one. At that point, I rotated a couple of times in the water. I then located and released the right Koch fitting.

"The wind was still keeping the chute partially inflated in front of me, and it irritated me. I felt that was the reason for my not being able to untangle myself. I was beginning to get tired and was a bit afraid of drowning. Then I got the great idea to inflate my LPA-1.

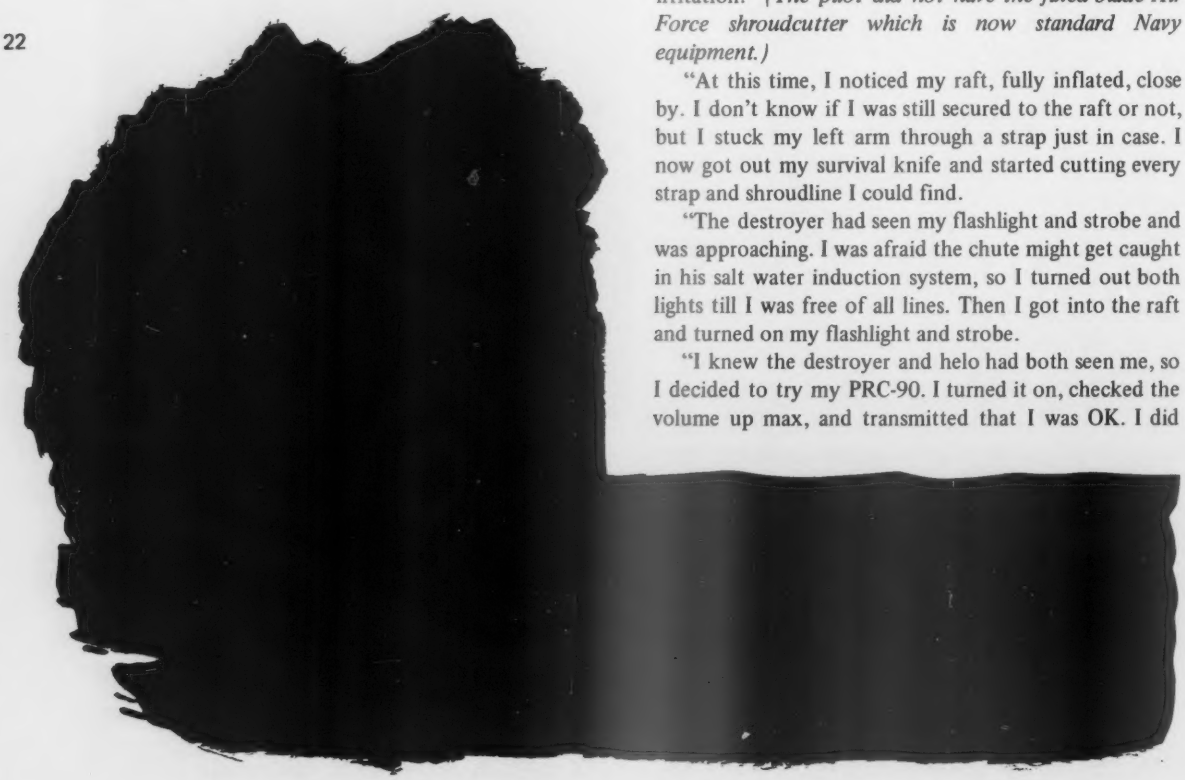
"I found both toggles, pulled the right one, and waited as it inflated the bladders. I was comfortable and had stabilized in the water, so I elected not to pull the left toggle.

"I was blowing downwind onto the chute canopy and got extremely tangled in the canopy and shroudlines. I got my shroudcutter out and started working on the lines. Each time I pulled the cutter, it closed on my fingers. This was not really a problem – just an irritation." *(The pilot did not have the fixed-blade Air Force shroudcutter which is now standard Navy equipment.)*

"At this time, I noticed my raft, fully inflated, close by. I don't know if I was still secured to the raft or not, but I stuck my left arm through a strap just in case. I now got out my survival knife and started cutting every strap and shroudline I could find.

"The destroyer had seen my flashlight and strobe and was approaching. I was afraid the chute might get caught in his salt water induction system, so I turned out both lights till I was free of all lines. Then I got into the raft and turned on my flashlight and strobe.

"I knew the destroyer and helo had both seen me, so I decided to try my PRC-90. I turned it on, checked the volume up max, and transmitted that I was OK. I did



this twice and listened for a reply, but none came. *(The radio functioned normally later aboard ship.)* I started to try the PRC-63, but the helo was coming and I secured both radios. As the helo approached, I got out of the raft and pushed it away as directed by the swimmer. He looked underwater for lines, but found none. He hooked us both up to the hoist, and we were retrieved without delay."

The pilot had some comments on his survival equipment.

"I was very satisfied with all my equipment as it all functioned as advertised. All the little strings, bags, straps, and pouches that surrounded me were an annoyance. In my opinion, they hinder freedom for the immediate survival problem, but are, no doubt, useful for the long-term situation and/or search phase. My reaction was to cut it all away and discard it.

"I don't know how my raft got inflated, but it presented no problem and was reassuring."

The investigating flight surgeon had a number of comments on survival equipment and its use:

- As prescribed in NATOPS, it is wise to inflate both lobes of the LPA-1 before water entry to ensure your ability to stay afloat in case of possible injury, unconsciousness, or entanglement in the chute following water entry.
- The folding combination knife and shroudcutter is unsatisfactory. It should be replaced with a rigid handle model such as the Air Force uses. *(This has been done.)*
- As NATOPS procedure, it's a good plan to always inflate the LR-1 when in a water survival situation even when rescue is imminent. The raft constitutes a larger visual target for SAR personnel and provides the survivor with that important little bit of added confidence so sorely needed.
- Even though the SV-2A survival vest is somewhat cumbersome, it should be retained at all costs for obvious reasons.
- The accidentally released dye marker's visibility to the pilot of the rescue helo was a welcome surprise. Some thought should be given to using dye marker as an additional visual reference for rescue attempts, both day and night.
- The B/N's calm acceptance of the fact that he was hopelessly entangled in his shroudlines and his decision not to further compound his problems by struggling to free himself must be applauded.

Finally, it looks as if the problem of getting rid of your parachute in the water will be a thing of the past. A system called MAN/SAFE (Manual/Automatic Separation and Flotation Equipment) will automatically get rid of your chute and inflate your inflatables on water contact. Another system called an encapsulating raft will permit aircrewmen to make "dry" water entry following parachute descent. In this case, release of the parachute is not essential since entanglement and drag would be no hazard. Both designs are off the drawing board and have been successfully jumped at El Centro. In the meantime, we must still rely on survival training and presence of mind. ◄

Final Checker

SEVERAL Naval Air Training Command squadrons have added a new fillip to their operations. During a recent visit to Beeville, Texas, Naval Safety Center representatives had an opportunity to see how it works. They found, for example, that VT-24, VT-25, and VT-26 (TRAWING THREE), working together, have stationed a final checker in the throat area between the line and the taxiway.

Thus, as each TA-4 or T-2 aircraft passes from the line area to the taxiway, it is stopped and given a final exterior inspection by the final checker. Discrepancies discovered include:

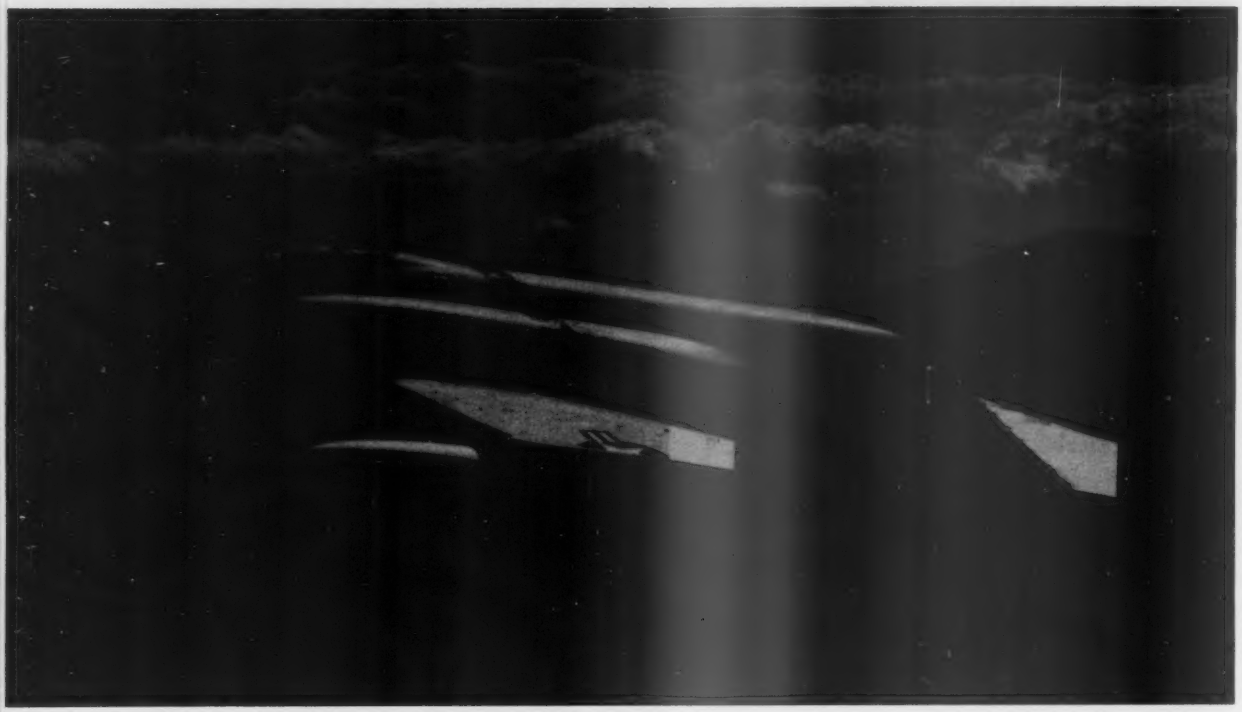
- Hydraulic leaks.
- Inspection panels and doors open.
- Low nose strut inflation.
- Tire discrepancies.
- Inoperative anticollision lights.

The biggest payoff, however, has come through the discovery in three instances where TA-4 elevators were disconnected. This alone has made the program eminently worthwhile.

APPROACH salutes these squadrons for their extra effort to make their operations safe.

Could your squadron adapt this idea for use?

MIGRATORY BIRDS



WHEN a command has its permanently assigned allowance of aircraft onboard, a sense of stability exists for both aircrews and maintenance personnel. Aircrews get to know the aircraft, how they perform, and any associated peculiarities. Those in maintenance become familiar with the history of each aircraft and problems associated with the many components and systems.

During periods of acceptance and transfer, this stability soon deteriorates. Aircrews find themselves flying "unfamiliar" aircraft for an undefined period of time. Their only real knowledge of the "new" birds is that gleaned from the previous reporting custodian's documentation.

This limited information will prevail until all assigned aircraft have been operated for an appreciable time by all in the command. Past experience indicates that during this transition period many discrepancies appear. Small components fail or only partially work, leading to the possibility of more inflight problems and emergencies. It can become a trying time for aircrews – one in which a thorough knowledge and rapid application of all emergency procedures become absolute necessities.

Maintenance personnel are required to pull more than the usual number of checks, and more time is spent troubleshooting and working off discrepancies. These aircraft definitely interrupt the smooth flow of normal squadron operations, fostering a natural tendency to bypass or shortcut sound maintenance procedures and practices.

Commands are reminded that during these turmoil periods supervisors cannot afford to overlook minor deviations from NATOPS or other prescribed procedures in their efforts to meet training requirements and operational commitments. It has been proven time and again that when documented and prescribed SOP or maintenance practices are not conscientiously observed *the groundwork has been laid for a mishap*.

Let those up the chain of command know if transfer problems prohibit meeting all commitments. Don't let being overcommitted drive you into an accident.

The point is that *all* aviation squadrons will experience transfer and acceptance problems this next year. Therefore, the aviation community must ensure that training and maintenance plans give this insidious set of circumstances proper and constant attention.

Adapted from COMFITRON ONE message

notes from your flight surgeon

Surprise of Your Life

PILLS and booze can be a dangerous mixture.

A young sailor found this out the hard way. He was taking medication for a cold, went to a party, had some drinks, and passed out. He's all right now, but he had to spend a couple of days in the hospital, part of the time in the intensive care unit.

The sailor remembers his private physician cautioning him about mixing pills and alcohol, but says he had no idea that the medication's effects would last as long as they did.

To generalize and philosophize here a bit – the name of the game today is "A Pill for Everything." The time when a person took pills *only* when he was very sick is long gone. But, doctors warn, people today don't seem to realize that it is common for drugs to be additive in their effects. A "for instance" is the dangerous combination of barbiturates and alcohol.

- Avoid do-it-yourself drug programs. The results can be serious.
- Follow your doctor's advice.
- If you don't make allowances for one drug's effect on another, be prepared for the surprise of your life.

Post-Ejection Miscellany

THE SEQUENCE of events during the pilot's escape and rescue points out several things of interest.

- He had his oxygen mask on, and he kept his helmet during ejection.
- He used only one-half of the Mk 3C, but this was adequate to keep him afloat.
- He completely forgot his URT-33, the sea anchor feature of his raft, and the attachment lanyard on the side. He also forgot the high-visibility feature of the tarp along the aft edge.

This seems to be in keeping with my previous experience that aviators tend to forget survival gear not carried on their person.

Investigating flight surgeon

Delayed Return

FOG and terrain prevented rescue of a helicopter crew who subsequently spent the night at the crash site.

The morning after the accident, at least two squadron aircraft landed at the site before the investigation team was taken there. None of the pilots were aware of the importance of taking the pilots involved in the accident back to the ship for medical attention. When the investigation team arrived on a later flight, the pilots still had not been returned to the ship.

"The only explanation that can be offered," the investigators reported, "is the very sincere belief of everyone that the pilots were uninjured. Also, the pilots themselves desired to remain in the field for a short time to assist the team. The squadron flight surgeon, believing the pilots were inbound to the ship, remained aboard to receive them rather than go with the mishap team.

"Personnel in the field either forgot or never realized the very real possibility that the involved pilots might have sustained injuries not apparent to the untrained eye.

"The delay in returning the pilots to the ship the following morning is considered to be a serious oversight," the report continues. "The possibility that a similar situation would occur in the future should be overcome by training and awareness of all hands of the necessity of immediate evacuation and medical examination."

Fatigue

FREQUENTLY, the victim of the fatigue-induced accident is the hard-driving, competent, proficient, excessively motivated pilot. Unfortunately, he will often be the one least apt to heed the warning signs and symptoms of fatigue – especially when it means cancelling a flight.

Flight surgeon in MOR

Recommendations

- WHEN an LPA-1 is due for inspection, crewmembers should wear the survival gear they would normally wear if they actually had to eject. While suspended, they should inflate the LPA to investigate problems in head movement with a helmet on and find ways to position the collar lobe to increase head movement. Also, for practice, crewmembers could remove the antichafing material from the lower clips before fastening the lobes together.
- All aircrews should be reminded of the importance of having the collar lobe of the LPA fastened securely with no slack while uninflated. A loose-fitting collar lobe before inflation could possibly become dangerous in a descent with the LPA inflated.

Flight surgeon in MOR

Anymouse

Some Movement

A P-3 crew arrived to preflight their aircraft for a return leg home after a RO2N at NAS West Coast. They were surprised and chagrined to discover the aircraft had somehow pivoted 45 degrees from the heading on which they had parked. The line crew disavowed any knowledge of the situation, and it was not until meteorology was consulted that a possible cause of the mystery was brought to light.

In the early morning hours while the crew was asleep, a frontal passage occurred, accompanied by high winds gusting to over 40 knots. The front was most unexpected. The PPC had consulted meteorology upon arrival and again the next day and was advised no significant weather was predicted. Furthermore, because no unusual weather was in store, the aircraft wasn't scheduled for refueling for the return trip until preflight.

Prior to frontal passage, meteorology failed to notify the NAS command duty officer or operations duty officer. Thus, the line crew didn't check the security of parked aircraft. The high wind conditions are believed to have caused the P-3 to jump its chocks and swing around into the wind. No padeyes were available, so the aircraft wasn't tied down.

Thus was born a new dance rage for the day called "the P-3 hop-chock swivel." Upon learning what most likely caused the incident, the PPC and crew, with additional help from station personnel, gave the aircraft a thorough inspection. No damage of any kind was uncovered, and in due course, they returned uneventfully to Homeplate.

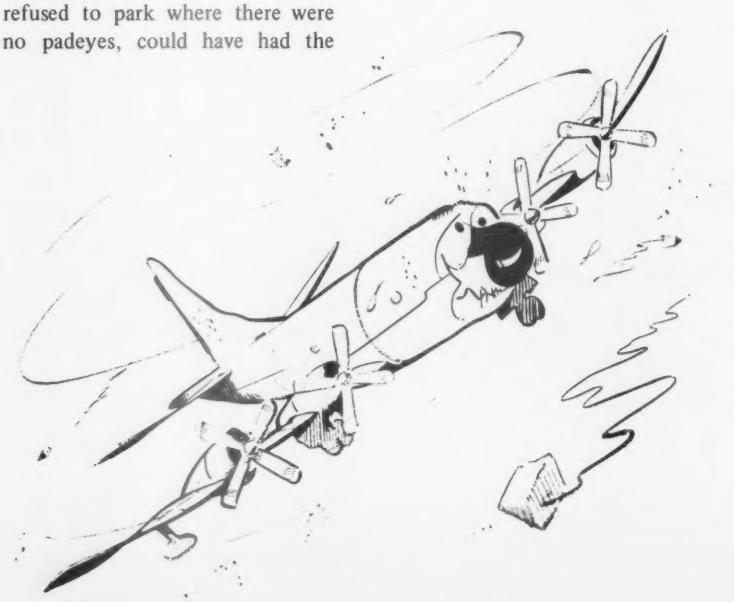
This incident could have been prevented. The pilot could have refused to park where there were no padeyes, could have had the aircraft tied down, and also could have had the plane refueled to minimum ramp load. But even so, why would line personnel park a transient in an unsatisfactory parking area? Further, the crew never did get an explanation for the breakdown in communications between meteorology and the duty crew before the front moved through.

Teedoffmouse

You've summed up pretty well the ways the incident could have been prevented. And since the aircrew was at least equally at fault, chances are that this whole amateurish show got swept under a rug. What's needed here is a little hard-nosed attention from the air station Ops and some changes in SOP. Same goes for the parent squadron.

A Little Premature

UPON returning to NAS Homebase after a night training mission in our A-6A *Intruder*, ground control cleared us for a "right turn off, cleared to cross the



The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT,
PREVENT AN ACCIDENT

off-duty." We turned off the duty and began the postflight checklist.

I was busy turning off switches when the pilot slammed on the brakes. As my head came up, I saw a P-3 rotating directly in front of our aircraft on the "off-duty" runway. Needless to say, if the pilot had not been looking, we would have been crossing the off-duty at the same time the P-3 was crossing the intersection on his takeoff roll. As it turned out, the P-3 had taken off without tower clearance. In my opinion, our clearance to cross the off-duty had been a little premature.

Get the message? Keep a good lookout doctrine at all times. It not only saves good aircraft but lives as well.

Intrudermouse

Low Fuel

MY wingman and I launched from NAS Lemoore, filed IFR to the Coaldale 073/55, then VFR on a canned, low-level route to NAS Fallon. He had two 300-gallon drops, a MER on the centerline, and a TER each on stations one and five. My configuration was two drops, a MER on the centerline, and *two* TERs (piggy-back) each on stations one and five. Fallon weather was basically clear with unrestricted visibility. We had figured that, with a drag count of a MER and two TERs, we could terminate the low-level portion of our route 300 miles from Fallon with 3000 lbs of fuel and land with 1000 lbs.

Once we started the low-level portion, I saw that the four TERs I was carrying produced more drag than I had anticipated. It took me 4000 pph fuel flow to maintain .54 Mach. When we popped up east of Beaver, I had 3300 lbs. My wingman had 3900 lbs. Fifty miles from Fallon, I had 800 lbs, my wingman – 1600 lbs.

I have practiced low state fuel descents and landings many times and, therefore, was confident of my ability to land with no problems. From FL 260 at 50 miles, I started a 75 percent descent using 9.3 units AOA. Gear and flaps were dropped at 2000 feet AGL, about a mile and a half from the runway. I didn't have to touch my power during the approach. I shut down with about 400 lbs.

I learned the following lessons:

- Allow a little extra fuel with high drag configurations.
- Know the max range descent AOA.
- Know the drag index of what you're carrying.
- Declare emergency fuel when appropriate (this never entered my mind although I was planning on a waveoff).
- Practice pays off – except for my failure to declare an emergency, I knew exactly what I wanted to do with a low fuel state.

Anymouse

"GA"

A COUPLE of months ago, I saw six helicopter crewmen working around an HH-3A. I remember the big side number was No. 65.

I listened in amazement while a safety petty officer advised his buddies of the hazards of climbing in and out of an aircraft *on jacks.* He caught all kinds of verbal abuse – you know, friendly like.

I was about to step in and help him when I rounded the helicopter tail and saw an officer. (Someone later said he was their OinC). Neither the officer nor the men were paying any attention to the safety PO.

I wanted to submit this because I remember a safety poster which said . . .

If you need an accident to admit there's a problem, then you are part of the problem.

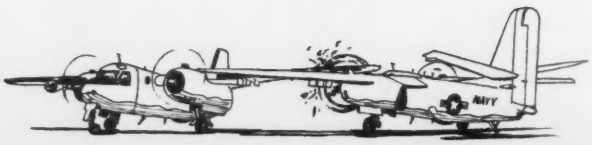
SafetyPOmouse

Hang in there, brother, and keep plugging away. Don't hesitate to speak up when you're in the right where safety's concerned. Who's about to dispute you? ◄

Report Errors Directly

WE recently received an Anymouse that reported an apparent error in bearing information obtained from a VOR station. The most direct action a pilot can take when confronted with these circumstances *is to report the error to the controlling agency on the spot.*

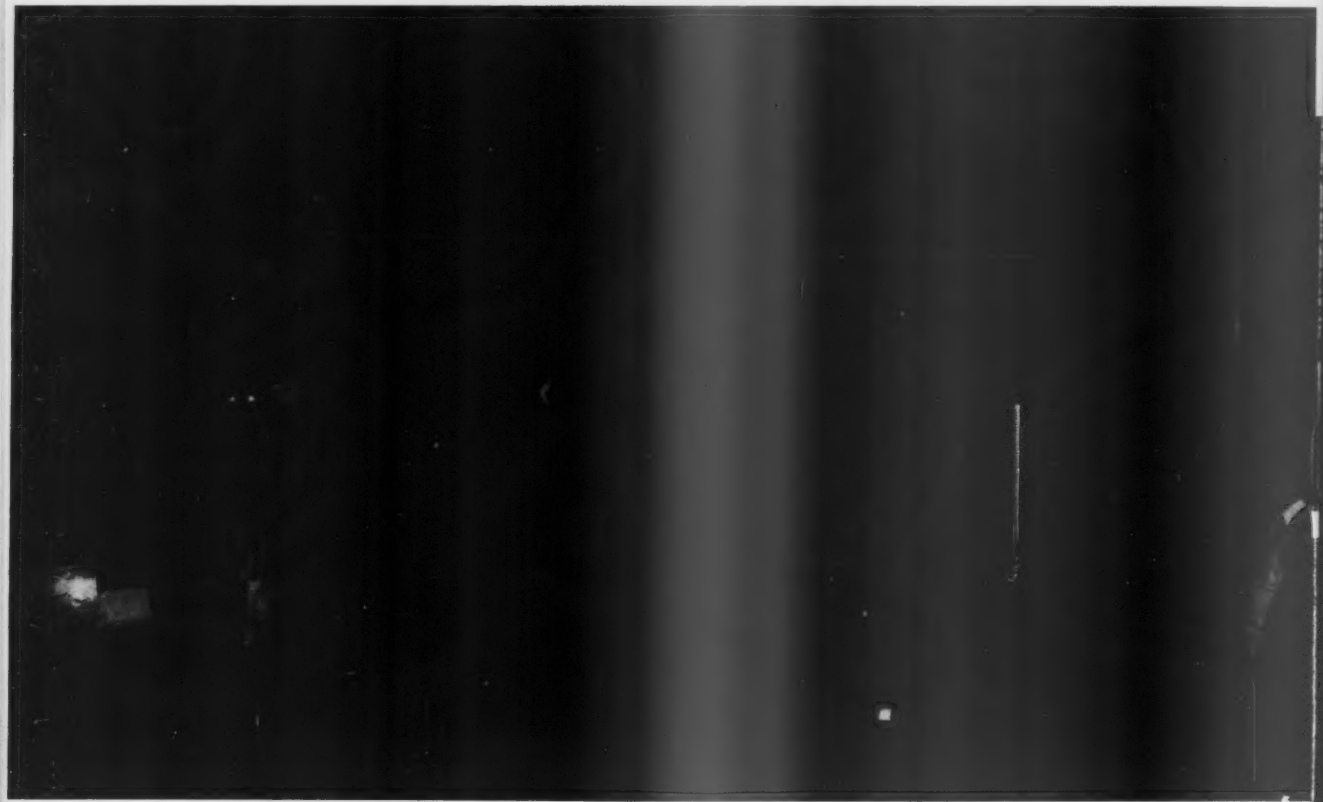
Fully Preventable



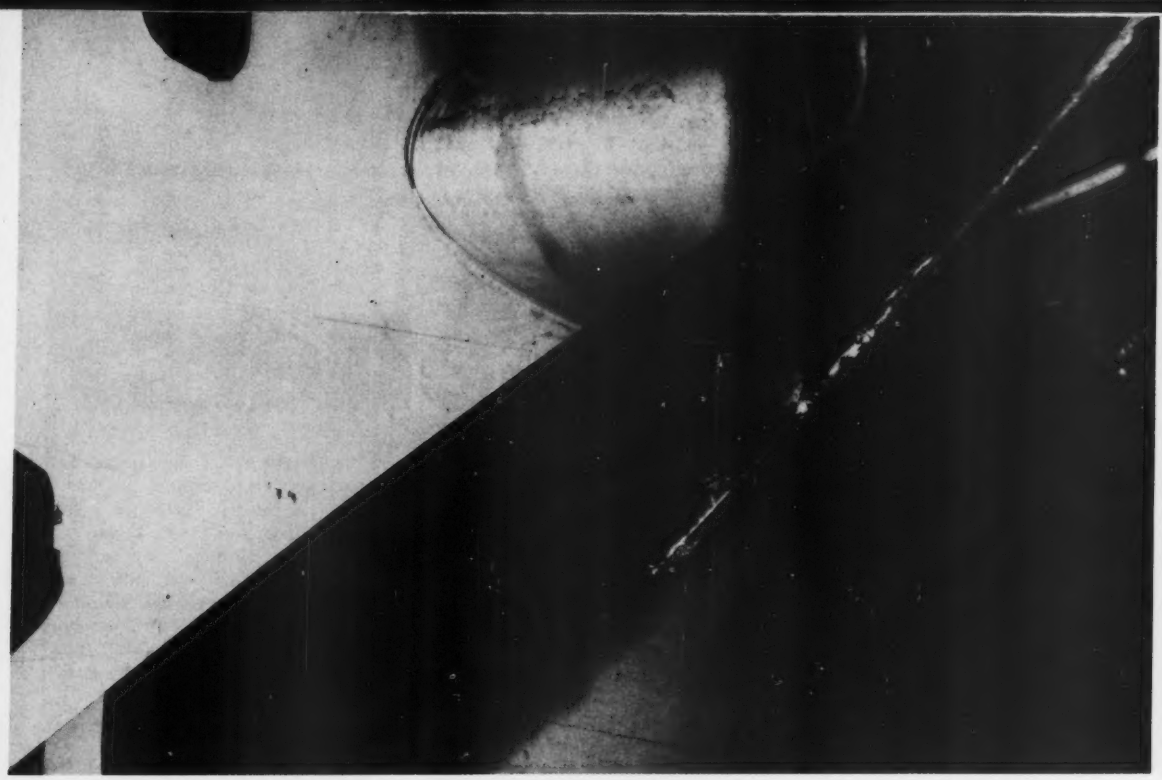
TWO student pilots were scheduled for a night solo bounce flight in a TS-2A. After takeoff, the student in the left seat completed six touch-and-gos and then made a full stop.

He requested and received clearance back to the runup area where the students switched seats. At this time, the pilot in the left seat performed the runup, completed the takeoff checklist, and instructed his copilot to contact the RDO (runway duty officer). The RDO advised them to contact the tower and taxi to the hold-short area. The pilot performed a brake check as he taxied.

Approaching the hold-short line behind two other aircraft, the pilot applied both brakes smoothly. He



The final position of both aircraft showing the port wing damage.



The damaged blade area caused when the windmilling port prop chopped into the port wingtip of the parked bird.

noticed his port brake was not pumping up properly and directed the copilot to try his brakes. When the copilot indicated the port brake was malfunctioning, the pilot applied both brakes hard, and the aircraft turned 90 degrees to starboard. He set his parking brake, and the aircraft stopped. The pilot then directed his copilot to advise the RDO of a hydraulic leak and request a tow.

As a result of one weak radio and traffic on his other radio, the RDO thought the aircraft with the brake problem to be an aircraft in the line area. He (the RDO) instructed the aircraft to taxi clear of the taxiway if control was possible and to shut down if it was not.

The students understood this to be instructions to taxi back to the line area and shut down. The pilot commenced taxiing using asymmetrical power and starboard brake to control the aircraft, relying on the parking brake for stopping.

Entering the line area, the students were confronted with two aircraft taxiing toward them. The pilot applied starboard brake to turn clear and attempted to set the parking brake – without success. The *Stoof* was headed directly towards the operations hangar. Applying power to the starboard engine, he turned clear, narrowly missing a loading ramp.

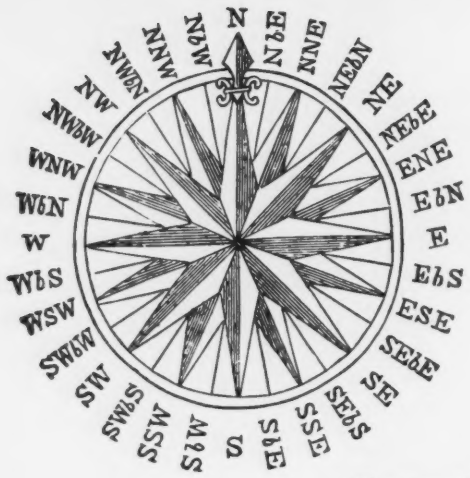
Still on the roll, the S-2 headed toward another solo aircraft parked on the line. The pilot again added power to the starboard engine and avoided this aircraft, but contact with another was unavoidable (see photo). Just before impact, the pilot secured the port engine. The windmilling port prop chopped into the port wingtip of the parked bird. The starboard engine, mags, battery, and fuel were secured, and both students exited the aircraft.

Investigators concluded the cause of this accident was pilot factor. Although the accident was precipitated by material failure of the brake, the student pilot in command had several opportunities to stop the aircraft before reaching *extremis*.

Supervision was also a contributing cause, namely, the RDO. Although communications between the RDO and other aircraft may have been unclear or confused, the RDO did acknowledge that a taxiing solo aircraft had a brake discrepancy, hydraulic in nature. Yet, he advised the aircraft to taxi, in violation of NATOPS.

The Training Air Wing Commander noted in his endorsement:

"Any order by an instructor or duty officer contrary to NATOPS should be questioned. In the instant case, the pilot in command obviously felt that the duty officer had the authority to overrule NATOPS. All commands in the training wing will henceforth brief all pilots that any orders from persons in authority contrary to NATOPS will be challenged. Where there is doubt, NATOPS will prevail." ◄



Many a forgotten safety rule is remembered while waiting for the ambulance.

Ace L.

Letters

Change It Today!

Washington, D.C. – Although it has been over a year since the directives were issued calling for implementation of the Engineering Cognizance Program, some activities have yet to fully comply with the guidelines presented at that time on the subject of "info addees" listing.

These directives stated that CHNAVMAT (among others) was to be deleted from the UR info addee listing presented in "NAMP," OPNAVINST 4790.2 (para 804, pg 8-4, Volume III). Additionally, Interim Change 10-72 to NAMP reiterated this same deletion. In an attempt to reduce input of unrequired information type correspondence, CHNAVMAT should also be deleted as an info addee for copies of DIR and Engineering Investigation results.

It would be appreciated if readers of MECH and APPROACH were notified of these desired deletions. *CHNAVMAT, however, desires to remain in the mainstream of other maintenance matters.* Material dealing with logistics and supply, plus other pertinent matters, should continue to be sent to CHNAVMAT.

CDR R. H. Healy, USN
NAVMAT Code 04133B

The First First

NAS Brunswick – Re inside back cover June 1973 APPROACH. I was the navigator on a SP-2H which shed a nose tire on landing and was brought to a safe stop by engaging the chain arresting gear with a ground down nosewheel at NAS Whidbey Island on 28 September 1965. Then LT, C. W. Lockhart, USNR, and LT John "Buoy" Arnold, USN, were pilot and copilot respectively.

Our operational debrief was delayed by the pilot's having to fill out an "Arrested Landing Report," the *first* time a P-2 driver has had that postflight responsibility.

Lieutenant Commanders Lockhart and Cushing used nearly identical procedures in safely stopping their aircraft. It is interesting to note that both are still actively flying *Neptunes* and passing their unmatched experience on to *Neptune* Nuggets. Perhaps they should meet to discuss the next logical step for the P-2, a carrier trap, so that the *Neptune* can lay claim to being the only Navy plane to have done it all.

LCDR W. J. Roberts
VP-11

"... And Another"

New River, N.C. – In reference to your "Bravo Zulu" in the June 1973 issue of APPROACH, that may have been the first *recorded* arrestment of a P-2, but it was not the first time it has happened.

In 1965, I was the tower supervisor on duty when a P-2 apparently landed with locked brakes since both main tires blew on touchdown. The aircraft continued up the runway on its struts/hubs. By the time it reached the midfield Morest gear, the hubs were worn down to a semicircular shape; and as the struts crossed the cable they were engaged, bringing the sliding aircraft to a halt after approximately 75-100 feet of runout, right of centerline and pointing about 45 degrees from runway heading.

The Morest crew later told me that there was sufficient run-out to count as an arrestment, and that it was so reported on their monthly report (type aircraft – P-2; type arrestment – unintentional; landing weight and speed – unknown).

GySgt James E. Strasser, USMC
NCOIC ATC Division, MCAS(H)

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request.

Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, Va. 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

Quality Assurance – Where Does It Belong?

FPO San Francisco, Calif. – Would appreciate seeing an article on the quality assurance division. Where does it belong – in the maintenance department or safety department? Has any official effort been commenced to officially allow QA to become part of a squadron safety department?

LCDR R. W. Harrison
VAQ-134

• A proposed safety department organization is presently being evaluated by selected Fleet squadrons (See lead article, August 1973 APPROACH). This organization calls for a maintenance safety officer within the safety department who also acts as the quality assurance officer under the direction of the maintenance officer. Developments in this trial safety organization will be monitored and reported in APPROACH. In the meantime, we welcome all comments on the subject.

FLIP Changes

THE DEFENSE Mapping Agency, St. Louis, Missouri, has notified the Naval Safety Center of the following changes to FLIP documents:

• *Airport Traffic Area Speed Restriction.* The FAA has revised speed restrictions within certain ATA (Airport Traffic Areas). When an ATA lies with a TCA (Terminal Control Area), the maximum indicated airspeed for all aircraft will be 250 knots. For ATAs that do not lie within a TCA, the speed restrictions remain 156 knots for reciprocating engine aircraft and 200 knots for turbine powered aircraft.

• *DD-175 Instructions.* The following changes to the DD-175 instructions have been incorporated in FLIP Planning Section II:

(a) Enter aircraft numbers as follows:

(1) USAF and USA – enter aircraft tail number.

(2) USN – enter aircraft bureau number.

(3) Formation flights – enter lead aircraft's tail number only; refer to item 31 instructions for recording the numbers of other aircraft in the formation flights.

(b) To facilitate filing SIDs and STARs with coded identifiers, items 10, 11, and 17 of the instructions have been modified.

Transportability

Monterey, Calif. – I found myself amazed at some of the comments and suggestions made by LTCOL D. N. Anderson in his article "Transportability, the Missing Link in Helicopter Personal Survival Equipment" (May 1973 issue). His question about why flight crews fly without part or all of their required flight gear should have been answered by "lack of command attention, be it on the wing, squadron, or detachment level." I do not, however, dispute LTCOL Anderson's contention that our survival gear is, indeed, cumbersome.

His proposed solution to the problem is, in my opinion, completely unacceptable. I believe it suggests two survival packages, containing the equipment for the entire crew, to be placed behind or adjacent to the pilots' seat area and attached to the pilots by a lanyard or worn as a parachute. The parachute approach is no less uncomfortable than the present system. The lanyard concept is exactly what should never be done – tie a crewmember to the aircraft at the precise time he wishes to exit.

If this survival package is anywhere in the aircraft except on the crewmember, himself, we are anchoring a man to a sinking or burning aircraft. A crewmember's logical solution would be to never connect this lanyard and hope that *maybe* he can get it on his way out of the stricken ship. If it is sinking or burning rapidly, he will wind up with zero survival gear. This applies especially if *each* crewmember has his own package. If there are, indeed, only two such packages, what happens when the pilot or copilot doesn't make it out? Why does the entire crew have to have its available survival gear cut by 50 percent? If the cockpit area is wiped out, I guess the crew aft will have nothing.

If changing the present system is necessary (and I'm not sure it is), allow me to offer this solution. Short-term survival gear remains part and parcel of a crewmember's gear worn on his person. This includes the one-man liferaft when applicable. Long-term survival gear can be packaged and placed at each crewmember's primary exit point. As applies to relatively slow-moving helicopters, these packages can even be mounted externally. This would facilitate making a quick and fairly safe return to a burning or sinking ship without the hazard of actually re-entering it.

I am certain my solution will have its own critics, but the point to remember is *never* chain a crewman down in any way.

LT Allen K. Mears
Naval Postgraduate School

• "I appreciate LT Mears' willingness to comment on the article because it indicates a sincere interest in aviation and military matters. Moreover, every idea or serious thought regarding problem areas like this one should be available for review by those charged with that responsibility.

"It is unfortunate, though, that LT Mears seemingly missed my basic point – the necessity for the transportability of helicopter survival equipment. Whether this was caused by a total shortfall in overall helicopter experience (combat and training) on his part, or for some other reason, I cannot say.

"I am, however, confident that the responsible individuals at the higher levels will not be as quick to toss out phrases such as 'lack of command attention' as the answer to such problems. In this particular case, I feel that command attention is what brought the problem up for review."

LTCOL D. N. Anderson

Annual Flight Minimums

NAS Willow Grove, Pa. – As the end of each fiscal year draws near, I find myself scrambling to meet annual flight time minimums; and as much as I abhor boring holes, I find it the lesser of two evils. Given a full fuel load, I have a choice of 2.5 hours of high altitude, straight and level, or 1.5 engaged in tactics. Since I have always preferred the short tactics hops (till now), my ratio of takeoff/landings per flight hour is probably higher than most; and although I have as many sorties or, in some cases, more than those who already have their 100 hours, I am still short.

By current criteria (flight time), as long as you have the time airborne, regardless of what you accomplish, you are considered qualified. At this time, I would like to suggest (I'm sure I'm not the first) that minimums be established to include sorties and or flight time. Fifty sorties at 2 hours each equals annual minimums, but 65 sorties at 1.5 hours do not. Given an equal number of takeoff/landings per sortie, the present system for annual minimum requirements indicates that the pilot with 30 percent more takeoffs and landings is less qualified.

MAJ S. Badiner
VMA-131

• A thought-provoking suggestion – but, in any event, the point is to make every hour in the air count toward *pertinent* training goals, whatever they may be.

Vol. 19 **approach** No. 3

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Our product is safety, our process is education and our profit is measured in the preservation of lives and equipment and increased mission readiness.

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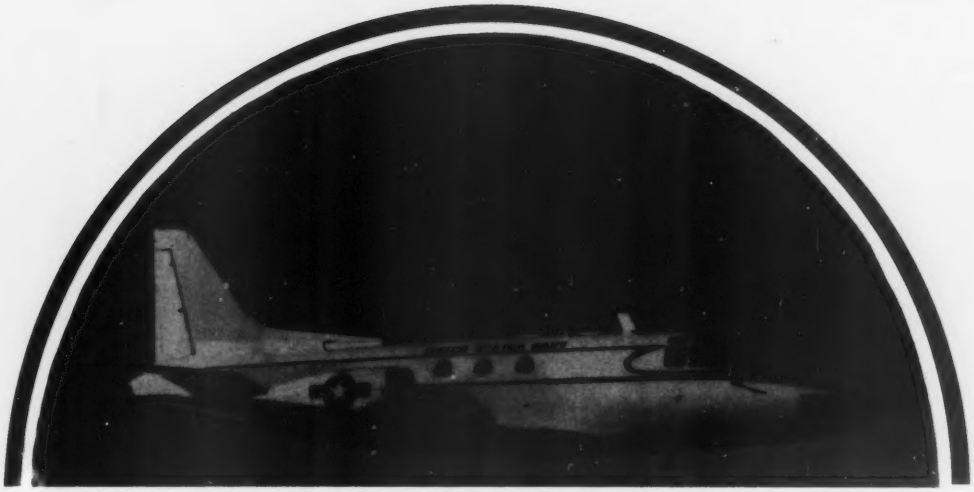

THE LAST SUNSET

By Roy I. Steele
Pensacola, Florida

AS we boarded our T-39, he told me, "You've got it, now take us home." Although I was only a designated copilot, he let me fly left seat. As we took off from Willow Grove bound for Pensacola, he was unnaturally quiet, except for answering the chatter of Departure and Center.

It was remarkably clear for that area. The only clouds were in the west, reflecting the setting sun. The blueish hue that covered the earth turned from blue to gray as the sun set lower and lower. When he broke his silence, he said, "That's probably the prettiest sunset I've ever seen." I took heed knowing that he had seen many sunsets and had witnessed many hours of flying, but I also knew he would probably remember this one the best. This would be his last sunset from the cockpit at 39,000 feet. In 4 days, he would be out of the Navy and out of the flying that meant so much to him. He was being forced to retire.

He was one of the old breed of aviators who had learned to fly when the Navy still instructed in biwinged airplanes. He was the kind of aviator for whom you have great respect. He was the true aviator that flew by the seat of his pants. He flew at a time when a dogfight was an aerial ballet to lock in on a bogie's 6 o'clock at 1000 feet, instead of today's computer-controlled vector to the rear of the enemy at 3 miles with no visual contact. It was when a bomb wasn't a computer-released nuclear warhead, but a small explosive that must be flown visually to a direct hit, or torpedoes that had to be flown right up the gunsights of an enemy's ship to be anywhere close to on-target. He was one of the rare ones that had bridged the gap from learning to fly with eagles of yesteryear to flying with speed and power of the space age. There wasn't an occurrence that happened in flying that he couldn't relate to a story of himself.

He could figure fuel consumption, flight time, and winds to perfection. He could name every major city, lake, and mountain range in the United States from 8 miles up. When he had a hand on the yoke, even the stiffest bump smoothed out. As an instructor, they called him "Doc"; because when the other instructors had a student they just couldn't teach, they would give the student to him. He saved many young aviators from washouts.

Now, as the sun set lower and the colors gave a deeper hue, his eyes turned from the west as he tried to occupy himself with other thoughts. But looking back again to the fading sun, his face reflected the softly lit sky. Yes, he was getting older. He was wearing glasses now. He was still wearing his old blue baseball cap pulled low over his eyes and puffing the black pipe jutting from his mouth.

Yes, as he retires, his breed will diminish, but may aviation long remember the lessons learned (*and taught – Ed.*) by such great pilots. So long, Doc – my hat is off to you and the other men of early aviation. ◄